NATIONAL PETROLEUM NEWS

Oklahoma State Order Limits Output To 700,000 Barrels a Day

By Lawrence E. Smith
N. P. N. STAFF WRITER

THE oil producing industry has turned a corner and now fronts definitely in the direction of co-operation between state and oil operators to limit production to market demands—a most significant move to the entire industry.

By order of the Oklahoma State Corporation Commission—which order was really drafted by the oil operators—production there is limited to 700,000 barrels a day until Jan. 1, 1929, and the methods by which crude oil output shall be held to that figure are prescribed.

In California, where 170 new drilling operations have started up in the Santa Fe Springs field in a race for a new deep sand, state authorities are considering calling operators together, in the interests of conservation of natural gas.

Since last winter, the state and the large oil companies in California have been endeavoring to reduce the production of excess gas, which reduction calls for a curtailment of oil output in certain fields as well. (See detailed story on Page 27)

An important fact concerning the order of the Oklahoma commission is that its text, recognizing the value of energy in gas in the ground as a moving force in oil production, for the first time sets up the right of the state to conserve the output of this gas to this end.

This principle of the value of gas energy in oil production has been dwelt upon by the American Petroleum Institute and the Federal Oil Conservation Board. It remained for the Oklahoma commission to embody it in an order. It is almost certain that efforts to embody it in state legislation will follow.

TULSA, Sept. 10

EFFECTIVE today, Oklahoma's oil production is limited to 700,000 barrels a day by order of the state corporation commission.

This figure, the commission order says, is about the current market demand for crude oil in the state. The amount to be produced may be increased or decreased by the commission.

Fields whose daily output per well is less than 100 barrels are not to be affected. The restriction is to be applied in eight, at present, flush fields whose output per well per day is over 100 barrels.

In this order, the state commission, which occupies a distinctive field among state regulatory bodies in that it is executive, legislative and judicial in its authority, recognized the relatively new theory of gas energy as the moving force in oil production. It asserted the common rights of producers in a pool to this energy force, and assigned this right as one of the reasons for restricting production.

The order is pronounced by most operators as the most solidly based and equitable of any yet issued by the state commission restricting operations in Oklahoma fields. Preceding orders covered one or two pools at the most.

It will be enforced as long as the majority of operators want it enforced. Included in the pools to be prorated is the Little River field, order on which expires Sept. 10. Little River has been produced since Aug. 15 at the rate of 1600 barrels per 40 acres.

The new order, signed Sept. 8 by Fred Capshaw, chairman of the state commission and Frank Carter, commissioner, provides:

1—Oil fields of the state are divided into settled and flush pools. A settled pool is one whose daily average per well is less than 100 barrels per day. No restriction is made on this class. Flush pools are those where the daily average per well is 100 barrels or more. Flush fields immediately affected are Seminole City, Little River, Bowlegs, Searight, Earlsboro, St. Louis, Allen and Lovell.

2—Daily production for the state is limited to 700,000 barrels per day, of which 275,000 barrels is allocated to settled pools and 425,000 barrels to flush pools.

3—Any wildcat well which is drilled in the state, while the order is in force, which makes 100 barrels per day or more, shall be pinched in to 100 barrels per day for 30 days and no other well shall be started within a mile of the discovery during that 30-day period without the written authority of the umpire. Within that 30-day time the producers owning acreage in the area affected shall be called together by the commission or the umpire to outline a development policy.

4—Any new pool opened, coming within the definition of flush area, or any settled pool that increases its production so that its well average is 100 barrels or more daily, will be added to the list of flush pools and prorated as are the other flush pools.

5—No wells in flush pools are to be shot unless the offset previously has been shot and then only by written authority of the umpire.

6—The order is in force until Jan. 1, 1929. The commission reserves the power to continue the order in force for 30-day periods after Jan. 1, but not beyond April 1. The commission also reserves the authority to increase or decrease the daily quantity that may be produced.

The order was drafted after an all-day hearing Sept. 6, in Tulsa. It was attended by nearly all the companies who produce oil in the flush fields designated in the order.

There was opposition to issuance of an order of this kind. T. B. Slick objected to the inclusion of the St. Louis pool, of Pottawatomie county, where he has large production, on the ground that his wells would be irreparably injured by prorating while other wells still have to be completed.

He believed that 30 or 40 days later, after all drilling wells in the pool had been completed, proration could be applied without injury.

Max Westheimer, of Ardmore, objected on the general ground that it is nobody's business how he handles his property and warned the commission and the producers that, if an attempt were made to restrict his production, he would fight it through the courts.

The royalty owners, through their association, endorsed the plan and a resolution by them was made part of the record.

Earlier in the week, Federal Judge Vaught, at Oklahoma City, dissolved a temporary restraining order he had issued on application of the Reiter-Foster Oil Corp. That order had tied the hands of the commission in the enforcement of the 1600 barrels per 40 acre restriction in Little River. This company will be compelled to make up the production it has had in excess of the allowed amount. The cumulative total of such excess at the end of the week was about 30,000 barrels, figures of the umpire show.

Reiter-Foster, therefore, will have to cut its production heavily to make up this amount, as it is allowed 30 days in which to even up the score. The company also faces citation by the commission for violation of the order and it was understood at the end of the week that such action would be taken.

In the new order, the commission breaks some new ground. It recognizes the value of gas energy in effecting recovery of oil. Previously, physical waste of gas had been the only thing ever forbidden by state conservation orders and no statutes have yet been enacted covering the energy principle.

The contention is, however, that ample authority is vested in the commission to forbid the dissipation of energy in laws covering underground waste. The value of the gas as a force propelling oil in the sands is well recognized by the industry and it is just a matter of time until state laws will take cognizance of it. The Oklahoma commission, however, pioneers among state regulatory bodies by embodying this paragraph in its order:

"The commission further finds that the unrestricted drilling and production of oil in the State of Oklahoma, particularly in the flush pools therein, during a period of overproduction, dissipates the natural gas associated with the oil, and reduces the natural gas pressure, thereby preventing the obtaining of the largest possible quantity of recoverable oil, thus causing the economic waste of oil, gas and casinghead gas, as defined in the statutes of Oklahoma, and causing actual waste in the sense that the gasoline content of the casinghead gas is not extracted as would be done under proper methods of development and extraction."

For the greater part, though, the commission took into account the economics of the situation. It found, it is said, that the current market demand for crude oil in the state amounts to about 700,000 barrels at this time and that such demand will fall off 100,000 barrels below 700,000 during the fall and winter months. Production, on the other hand, unless curbed, may reach 800,000 or 900,000 barrels daily. The purposes of the order, it was set forth, are as follows:

1—To prevent the waste of oil, gas, gas pressure, casinghead gas and casinghead gasoline, as the term waste is defined in the statutes of Oklahoma.

2—To prevent the unfair and inequitable taking of oil, gas and casinghead gas and the disproportionate use of the gas pressure to produce oil by one or more operators in a single pool against the other operators in such pool.

3—That owing to the character of the market facilities available to the oil operators of Oklahoma, and to the economic situation of the State of Oklahoma as a producing and refining center, all of the oil operators of this state in effect are confined to a common market for their production. That, accordingly, unrestricted production in one flush pool of the state constitutes a discrimination against the operators in any other flush pool where production is restricted or curtailed. That the further purpose of these regulations is to equalize the situation of the operators in the different flush pools of the state and to prevent discrimination in the taking of oil from one flush pool against another or other flush pools.

The method of prorating is described in the order as follows:

"Until the maximum production allowed hereunder shall be changed by order of the commission . . . or until the commission shall make a different allocation of the total allowable production between the settled and the flush pools, said flush pools shall be permitted to produce but 425,000 barrels per day. To accomplish this, three types of potential production shall be ascertained in the manner hereinafter provided: First, the potential production of each lease in all of the flush pools; Second, the total potential production of each flush pool; Third, the total potential production of all flush pools. When all potential production has been ascertained according to the classification aforesaid in the manner hereinafter provided, every flush pool in the state of Oklahoma and every lease in each of such flush pools shall be prorated upon the following basis:

"Each flush pool shall be permitted to produce such proportion of the total allowable production of 425,000 barrels per day as the potential production of that pool bears to the total potential production of all flush pools. Each lease in a particular flush pool shall be permitted to produce such proportion of the allowable production allocated to such pool as above provided as the potential production of such lease bears to the total potential production of the flush pool of which it is a part. In the event the commission shall reduce or enlarge the total quantity to be produced in the state, as hereinbefore provided, or in the event a different allocation shall occur under order of the commission between pools with settled production and those with flush production, then the same relative basis of production shall be followed."

Producers Approve Order

By Wallace C. Franklin, vice president Tidal Oil Co.,
Prominent Mid-Continent producer

"TWO years ago the condition of overproduction of petroleum became so acute as to awaken national interest in its conservation.

"The industry was called upon by the Federal Oil Conservation Board and in Oklahoma by the state corporation commission to take proper steps to conserve this resource.

"The industry in Oklahoma has endeavored to reach some solution of this problem. It has had at all times the cooperation of the state commission, which has endeavored to be helpful in the effort to prevent waste of the state's resource.

"Numerous operating and development agreements applicable to local pools, where waste was occurring or imminent, were made by the majority of operators in those pools and approved by the commission.

"The present order is the culmination of these efforts. It was approved by a vast majority of operators in the pools affected and issued by state commission after a public hearing."

75,000,000 Miles Air Traffic in 1928

A Small, But Growing Oil Market

By Clarel B. Mapes*

This article is the first of a series of studies to be made by the Mid-Continent Oil & Gas Association on the growing importance of aviation as an outlet for petroleum products. The association announces it has collected a comprehensive technical and statistical library on aviation and that it will keep up to date on the literature on this subject.

AVIATION, as an industry, is still an infant. When it is compared to other industries, present operations are so small they approach the realm of unimportance.

However, considering the various technical factors contingent to the development of aviation, we find that this industry is incomparable in its rate of growth, which in itself is a matter for contemplation.

In view of its romantic and adventurous appeal to the population as a whole, we may be assured that, if due to nothing more than national popularity alone, this industry will grow rapidly and prosper greatly.

This promise of great expansion is of high interest to the petroleum industry, since, until further development of the Diesel engine or other form of motive power, the aeronautical industry is dependent upon gasoline for fuel.

The World War provided the necessary impetus to give aviation a proper start, and the operations of the armies engaged provided a veritable aeronautical laboratory. Since the Armistice, civil aviation has passed through four distinct periods of growth:

"First, tremendous optimism founded upon the widespread curiosity of the public; limited financing built upon the assumption that curiosity would force the development of air transport without further engineering and without the application of a deliberately worked out national air policy.

"Second, diminishing enthusiasm and waning curiosity; dissolution of ambitious undertakings because of obsolete equipment, lack of airways, lack of public terminals, and, above all, lack of paying business.

"Third, readjustment upon a reduced but sounder financial basis; activities limited to those phases of aviation for which there is a demand; this demand increasing as evidences multiply of the early formulation of a national air policy." (Aircraft Yearbook—1925).

Fourth, formulation of national air policy and passage of the Kelly contract air mail law; various industries utilizing aircraft for business purposes; great air transport lines established, properly equipped, and adequately financed; permanent airways and airports established; important technical developments in heavier-than aircraft; and tremendous public enthusiasm occasioned by memorable trans-oceanic flights.

With this brief economic history, we may properly turn to the classification of actual flying. Aviation may properly be divided into two classes of operations, civil and governmental. Despite the fact that military aviation provided the necessary stimulus and technical development, we are mainly concerned with civil aviation, since this phase is the one which shows every promise of great growth.

The component phases of civil aviation are classed as follows: (1) *Air Transport*, scheduled traffic in mail, express and passengers over definite established routes: (2) *Aerial Service*, including all forms of commercial flying, except air transport, and ranging from aerial taxi service to crop dusting, aerial survey and photography, aerial advertising and news service, and flying instruction; and

*Technologist, Mid-Continent Oil & Gas Association.

Looks Like an Airplane. It's Really a Filling Station at an Airport

The Barnsdall Refining Co. has built a gasoline station which is an exact replica of an airplane, on the main highway at the Okmulgee, Okla., airport. The right wing serves as a station canopy. Under it are two visible pumps. A duplicate of a Wright Whirlwind radial motor, with a huge propeller, is mounted and the propeller kept whirling by means of a small motor. The offices are in the passengers' cabin. In the tail is installed an air compressor and battery of lubricating oil tanks

(3) *Private Flying*, including business and itinerant flying. With these classifications made, we have a basis upon which the industry may be gauged.

Due to a lack of official statistics and the dissemination of a multiplicity of incomparable unofficial statistics and estimates, it is virtually impossible to formulate a satisfactory detailed analysis of the aeronautical industry. Reports are incomplete and estimates vary widely. Hence in order to present any historical picture of value, it has been found necessary to both interpolate between and extrapolate before and beyond what official statistics are available.

As regards the manufacture of planes and engines, the period of the Word War saw the greatest activity, since, at that time the U. S. Army alone contemplated the actual immediate need of 9000 training planes and 20,000 combat planes. By effectuating a Cross-Licensing Agreement, the various manufacturers were able to deliver approximately 14,000 planes and 32,000 engines between July 1, 1917, and December 31, 1918. Since that period, production has been at a minimum and many manufacturing plants have passed into the field of inactivity.

Until the past two years, there has been little need for expansion of aircraft manufacturing; but with the formulation of a definite national air policy, civil aviation demands have increased until the manufacturing capacity is virtually that attained in 1917.

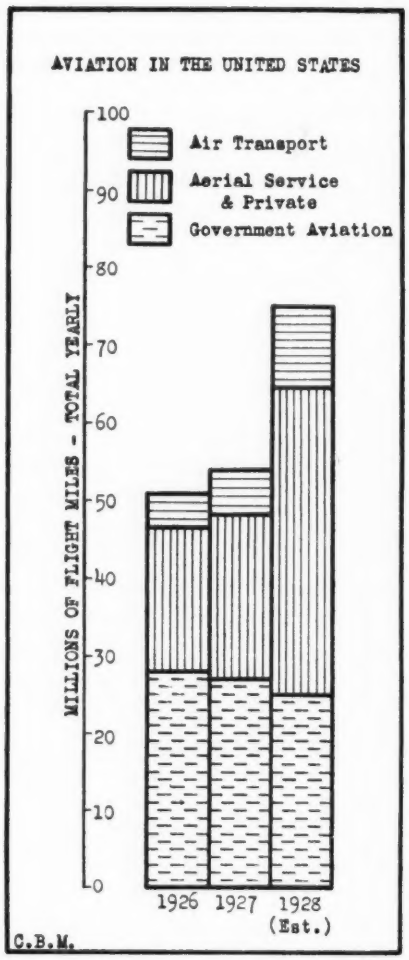


Fig. 1—Analysis of aviation in the United States showing growth of commercial and private aviation and the decline in government aviation

A survey of the manufacturers of the aeronautical industry discloses the fact that at present 84 companies produce airplanes and 10 companies produce seaplanes and amphibions only, while there are 13 companies manufacturing airplane engines. There are 30 dealers and 80 distributors of airplanes, and 15 companies manufacture aviation accessories. (See Table 1).

The availability of airways and airports has been one of the major problems of civil aviation and only in the last four years has this phase reached any development. In 1911, there was one airway of short length over which air mail was carried, and in 1918, there were only three or four definitely established routes, including a regularly operated air mail route of 218 miles length.

At this time, there was a total of 1115 fields in the U. S. at which landings might be made, and of these only 115 were developed to such an extent that they could be called airports. In 1921, it is estimated that there were 1841 available landing fields, the majority of the airports being military or naval or otherwise government owned.

Beginning with 1926, there has been quite a rapid expansion in aeronautical facilities, until it is estimated that there will be approximately 40 air transport routes in operation by the end of 1928, with a total airway mileage of 15,200 miles, of which approximately 7500 miles will be lighted for night flying. It is also estimated that there will be 4500 possible landing fields in the United States, 1600 of which will be improved airports. The following table presents the comparable figures available: (See Table 2).

Records of actual flight mileage of the various component phases of aviation in the United States are not available except in the form of estimates, mostly of an unofficial nature. The only available government statistics over any period of time are those for the air mail service. These show a decrease over the period 1920-23 inclusive, and from thence forward a decidedly progressive increase until it is estimated that there will be 8,250,000 miles flown with the air mail in 1928. Since all of the mail is now carried by contract operators, air transport will also show a commensurate increase for 1928.

Aerial Service is the phase of civil aviation by which the greatest amount of flying is done, and the Department of Commerce estimates that this branch flew 18,746,640 miles in 1926. While government figures are not yet available for 1927, it is estimated that aerial service operators flew 21,190,000 miles in that year and will fly approximately 39,300,000 miles during 1928. These estimates include private and itinerant flying.

The estimated (See Table 3), 49,800,000 flight miles for the year 1928 will be flown by approximately 570 commercial operating units classified as follows: 19 regularly operating transport companies, 413 specialty aerial service operators, 54 units engaged in aerial advertising, 82 units

(Table 1)

Airplane Production, Exports, Imports, 1917-1928

Years	Planes Produced	Planes Exported	Engines Exported
1917	*5000	*135	.....
18	*9300	* 20	.....
19	662	? 44	.....
20	.....	? 65	.....
21	302	? 48	.....
22	.....	37	147
23	587	48	80
24	.....	59	146
25	789	80	73
26	1336	50	297
27	1828	63	84
28	*3600	* 75	*200

*Estimated

(Table 2)

Scheduled Flying Traffic in U. S.

AIR TRANSPORT

Year	No. of Transport Routes	Miles of Airways	Total Route Miles (Including mail)	Landing Fields (Total in U. S.)	Airports (Total)
1911	....	1	.....	.....	.....
18	....	218	.....	1,115	115
19	....	930	.....	.....	.....
20	....	3,509	.....	.....	.....
21	....	3,509	.....	1,841	.....
22	....	2,738	.....	.....	.....
23	....	2,842	.....	.....	.....
24	....	3,010	.....	.....	.....
25	....	2,813	*3,000	3,608	846
26	18	8,410	8,928	3,806	915
27	26	8,223	9,855	*3,950	1,047
6/30/28	35	11,453	12,425	.....	.....
12/31/28	*40	*15,200	*16,600	*4,500	*1,600

*Estimated

engaged in aerial photography and survey.

Figures for all government operations are available only for the years 1926 and 1927. These figures include flight mileage of the Army, Navy, Marine Corps, Post Office Department, Coast Guard and Forest Patrol, and totaled 27,716,696 miles and 26,717,745 miles respectively. It is estimated that all government departments will fly a total of 25,200,000 miles during 1928.

Thus, including both civil and governmental aviation, we arrive at a total estimate of 75,000,000 miles to be flown in the United States during 1928, or a daily average of approximately 205,000 miles. This represents an increase over 1927 of approximately 50 per cent.

The gasoline consumed by aviation in flying these 75,000,000 air miles will be approximately 500,000 barrels, while approximately 25,510 barrels of motor oils will be used. The process of arriving at the average number of miles flown per gallon of gasoline and oil resulted in an approximation of 4 miles per gallon of gasoline and 70 miles per gallon of oil consumed. Flight figures over the past ten years have shown that the actual operating consumption of fuel ranged from 2 flight miles per gallon of gasoline to 12 flight miles per gallon of gasoline.

In October, 1918, the Post Office Department flew 12,671 miles and in doing so used 2293 gallons of gasoline, or an average of 5.52 miles per gallon, at an average speed of 69 miles per hour. From May 15, 1918, to June 30, 1919, the Post Office Department flew 184,034 miles on the New York to Washington route at an average speed of 73 miles per hour, and at the rate of 4.08 miles per gallon of gasoline consumed.

The official figures of the operation of the U. S. Army Model Airway for the years 1923-26 inclusive, covering the operations of all types of planes, give a total of 1,201,370 flight miles at an average speed of 81 miles per hour. A total of 332,011 gallons of gasoline and 20,524 gallons of oil was used over the four-year period, or an average of 3.62 flight miles per gallon of gasoline and 58.52 miles per gallon of oil.

Figures on notable long-distance and other record flights do not give a correct impression as to the average amount of gasoline consumed under commercial conditions. This is due to the fact that huge quantities of gasoline are consumed in cleaning motors and testing them, which must be included in total consumption figures when cost is to be accounted for.

On Lindbergh's flight to Paris of 3610 flight miles, 381 gallons of gasoline were consumed, which gives an average of 9.48 miles per gallon. On Goebel's recent West-East flight, he was in the air 18 hours 51 minutes and traveled at an approximate average speed of 150 miles per hour. Three hundred sixty gallons of gasoline and 20 gallons of oil were consumed, which approximates an average of 8 miles per gallon of gasoline and 130 miles per gallon of oil.

The above comparisons, and others, show conclusively that the actual gas-

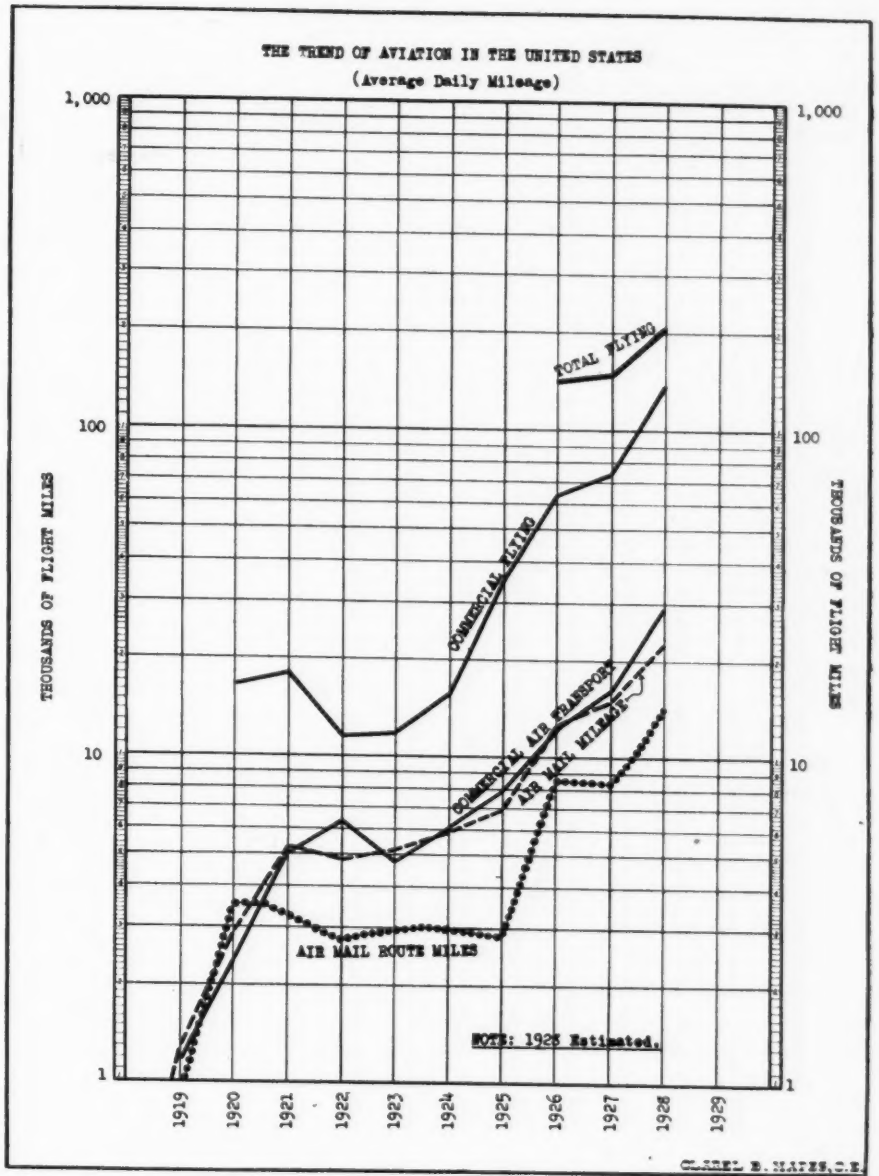


Fig. 2—Daily average mileage of airplanes in the United States by classes, showing the rapid upturn of the past four years

(Table 3)

Total Commercial Flying in U. S.

Year	Figures in Miles: Reported	Estimated (Includes Private)	Air Transport	Total	Daily Average
1920	*2,268,900	*2,863,450	*867,650	*6,000,000	16,393
21	*1,083,745	*3,592,755	*1,823,500	*6,500,000	17,808
22	* 537,237	*1,303,963	*2,308,800	*4,150,000	11,370
23	*1,294,011	*1,245,389	*1,720,600	*4,260,000	11,671
24	* 922,050	**2,500,000	*2,205,900	**5,627,950	15,377
25	*2,484,922	**7,303,760	*2,911,750	**12,700,000	34,795
26	*7,998,240	*10,748,400	*4,428,772	*23,175,412	63,494
27	*8,687,335	**12,502,665	*5,810,000	**27,000,000	73,973
28		**39,300,000	**10,500,000	**49,800,000	136,066

*Official or semi-official estimate **Author's estimate

(Table 4)

Gasoline and Oil Consumed in Flying

Year	Miles Flown	Average Miles Per Gallon: Gas	Oil	Total Barrels Gasoline Consumed	Daily Average	Total Barrels Oil Consumed	Daily Average
1926	50,993,157	4	70	303,531	832	17,345	48
27	53,477,745	4	70	318,320	872	18,190	50
28	75,000,000	4	70	446,229	1220	25,510	70

oline consumption of the average plane under all conditions and over a long period of time will approximate 1 gallon for every 4 flight miles. This is further substantiated by operating figures furnished by two large air transport companies who utilize various types of planes in their service of several hundred thousand miles per year on regular schedule. Both companies report an average mileage of 4.0 to 4.5 miles per gallon of gasoline consumed. One company reports oil consumed at the rate of 70.5 flight miles per gallon with one type of motor, and 108.5 miles per gallon with another type motor; but estimates an average consumption of 70 miles per gallon of oil for all types of motors used in air transport. (See Table 4).

From the above estimated average daily consumption of gasoline by aviation, it will be seen that this channel of consumption is virtually "a drop in the bucket" when compared to total demand. And the consumption of motor oil is quite negligible. However, the fact persists, that such consumption can be expected to increase materially year by year until it reaches some large proportion. And also the quantity that is now consumed most certainly represents a good little business for several refining companies.

Until the Diesel or other engines are further developed, or until some radical change in motive power is made, gasoline will remain the motor fuel for aviation purposes. And with the promised wide expansion of aeronautical activities and rapid growth of commercial air transport and aerial service, we may expect to see a large future demand for aviation gasoline.

Despite the present relatively small consumption of petroleum products, its importance to the oil industry must not be mitigated; for, considering the age of the industry, air travel is growing at a much faster rate than automobile travel was growing a quarter of a century ago. The airways of the world show a greater mileage than did the railways on their silver anniversary. In this manner does aviation bear an important relation to the petroleum industry.

Station Men to Be Trained For "Lubrication Week"

Staff Special
TOLEDO, Sept. 7

DETAILS and fundamentals of Ohio lubrication week—Oct. 20 to 27—were presented to members of the Ohio Petroleum Marketers Association in convention at Toledo Sept. 5 to 7.

When the question was put to the convention virtually all the 200 members attending the opening session rose to signify their approval of lubrication week. W. A. Milne, executive secretary of the association, announced that assurance of cooperation has been given by refiners and compounders to the extent that they would send representatives to educate station attendants on proper lubrication methods.

Sketches of two banners were exhibited. These are about three feet long by a foot and a half wide. They tell of Ohio lubrication week in red and black colors. They are substantially constructed and are suitable for placing at service stations or on tank trucks. Secretary Milne announced that costs would be 10 to 15 cents each depending on quantity ordered.

Pamphlets on auto lubrication were considered. These could be handed to customers before and during lubrication week. Costs would be $2.80 to $3.50 a thousand depending on the volume ordered. The two association field workers will devote their time until Oct. 20 in taking orders and in boosting the projects.

Installation of modern equipment and education of attendants to know lubrication was stressed by B. F. Connelly, Freedom Oil Works distributor in Akron, and father of Ohio lubrication week.

"Install a set of socket wrenches," Mr. Connelly urged. "Get a good gear flusher. Pay attention to chassis lubrication. Lubrication develops new business. Provide your own stations and dealers with complete and modern equipment," these were some of terse sentences in his address.

The motoring public is receptive to lubrication, he said. Members were urged to convert filling stations into service stations and give real service. He said in Akron station attendants were educated by weekly meetings.

Another point brought out by Mr. Connelly was that there was no sting in good lubrication for the auto dealer. While proper lubrication would prolong the life of a car yet the yearly models would insure a market for the new cars, he said. And there was much good will value to the auto dealer in good performance obtained through proper lubrication.

Lubrication demand of the recent automobile engines, the importance of viscosity tests to the car owner, dilution, and modern devices on lubrication systems were points in an address by H. C. Mougey, chief chemist, research laboratories of General Motors Corp.

E. W. Upham, chief metallurgist of the Chrysler Corp., explained the S.A.E. viscosity numbers. He told how the numbers were not specifications, and put the proposition concretely by pointing out that the numbers corresponded to the fit in buying clothes. The fit may be the same on a cheap or an expensive suit—quality was a variable factor. So the S.A.E. numbers would insure the fit of the oil—quality depending on the refiner of the oil.

Registration was on the morning of the first day. Total attendance exceeded 500. William T. Jackson, mayor of Toledo, welcomed the convention following the opening luncheon. The response and keynote speech was by J. L. Marsh, president of the association, and the Vahey Oil Co., subsidiary of Refiners Oil Co., Youngstown.

B. L. Majewski, vice-president of Shaffer Oil & Refining Co., spoke the first afternoon on "What Price Progress," stressing the need of unit cost accounting to know what each sales outlet is doing. The determination of the average sales cost throughout the country was suggested in order to refute charges of profiteering and to combat hostile politicians.

Speakers on the second day were Dr. Hugh P. Baker, manager of the trade association department of the U. S. Chamber of Commerce on "Group Action in Meeting Common Industrial Problems"; Col. J. G. Vincent, vice-president of engineering, Packard Motor Car Co., on "Types of Internal Combustion Engines and Their Fuel Requirements"; Hubert B. Fuller, of Chamberlin, Marty & Fuller, Cleveland attorney for the association, on "Amendments to the Ohio Gasoline Tax Law"; R. R. Lanning, Crystal Rock Gas Co., Logan, Ohio, on "Promoting Travel in Ohio"; Charles McLean, vice-president of the Canfield Oil Co., on "Present Marketing Trends"; and Wm. F. Burke, Kentucky Independent Oil Co., Cincinnati, on "Where Do We Go From Here?"

The banquet was on the second day's program with Frazier Reams as the speaker on "Basis of American Business Prosperity."

A boat ride to Detroit and Windsor was the third and final day's program.

Entertainment for attending ladies was trips to Toledo manufacturing plants, and to historical and interesting points in and near the city.

Mark Cowden Returns From Europe

WARREN, Pa., Sept. 11.—Mark Cowden, president of the Pennsylvania Oil Products Refining Co., will sail from Cherbourg on Wednesday for the United States. Mr. Cowden, accompanied by his son, has been touring Europe this summer.

Competition Holds Ohio Prices Low Says Standard Oil Co. of Ohio

CLEVELAND, Sept. 10

PRESENT retail prices of gasoline in Ohio are the natural outgrowth of competitive conditions in this state, according to numerous marketers who have not become aroused over present market conditions as have some marketers in northwestern Ohio, particularly in Youngstown.

W. T. Holliday, new president of the Standard Oil Co. of Ohio, universally regarded as the market leader in this state, said his company was only meeting Ohio competition in setting a 20-cent retail price, although retail prices in surrounding states were higher than those in this state.

Mr. Holliday stated to NATIONAL PETROLEUM NEWS:

"Prices are determined by market conditions and not by costs. Costs may be a factor affecting markets, but they are not necessarily the determining one. In other words, competition is the determining factor in prices.

"The Standard Oil Co. of Ohio in its prices today is simply meeting competition. What prices may be in other places is immaterial. We are competing in *Ohio*."

Mr. Holliday had no further comment to make, believing there was no reason to engage in a controversy when natural economic causes had brought on present conditions in the state.

At the Standard offices in Cleveland it was said the sale of $10 coupon books generally below $9 had been stopped when the tank wagon and service station prices were advanced 1 cent in Ohio Aug. 25. Books had been sold as low as $7.90 and one national account had offered its employes Standard coupon books at $7.40 as late as Aug. 2.

"Let us apply the cure this year and start 1929 in good condition," so J. L. Marsh, president of the Ohio Petroleum Marketers Association, advised in his keynote address at the Toledo convention of the Ohio association, Sept. 5.

"The present market was not brought on by anybody else than us. What we did we ought to be able to undo," he said after tracing conditions, and pointing out that these conditions travel in cycles.

Mr. Marsh related how the refiners were in the saddle now, whereas the distributor had the upper hand a few years ago. He advised members not to get pessimistic, especially since many marketers are comparatively newcomers in the business and have not witnessed a period of depression. He cited 1922 as a year of similar conditions.

"It (the present perturbed Ohio market) is not an attempt to put anybody out of business, it is an attempt to recoup losses made on you in earlier years," Mr. Marsh said.

"Now is a good time to lose business," said Mr. Marsh under the second part of his keynote address on what can be done about the situation, as it all depends on "us as to how soon it will be done."

He cited that his company, the Vahey Oil Co. at Youngstown and a subsidiary of the Refiners Oil Co., was some 100,000 gallons of gasoline a month behind last year and he said his company was not worried.

"Be satisfied with something less than last year," he advised, and told how a company set on increasing gallonage each year would soon have all the markets.

Reduction of overhead by close scrutiny of expenditures was advised also as a means of righting the situation.

Some Ohio distributors are just as willing as Mr. Marsh to let the clarifying process in the Ohio market continue unhampered, hoping that the market will become stabilized by next year.

One distributor said there was no disputing the fact that some jobbers had abused their marginal contracts by taking advantage of low contract prices to cut the market in an effort to build up gallonage.

A few jobbers who had contracted for more gasoline than they could use have been letting a car go now and then to a broker who undersold the current tank car market with the goods. Other distributors have even taken on tank wagon customers at prices under the spot tank car market, delivering contract gasoline which cost a cent or two under the spot market, it was asserted.

Newcomers in the industry, those that have entered since 1922, it has been pointed out, have not been accustomed to fluctuations in the market. Since the heavy influx of California gasoline in 1923 there has been no real slim market for the jobbers. Those who were in the market in 1922 know that there is a time in the swing of the economic pendulum when jobbers become pinched. In that year marketing conditions were so tight that L. V. Nicholas, president of the National Petroleum Marketers Association, urged its members to advance their gasoline prices regardless of what the large companies might do.

The following year conditions for the marketers loosened and when the large companies endeavored to let their costs govern their retail prices new competition came into the market with cut prices and in South Dakota and Nebraska the state and city governments opened gasoline stations.

It is common knowledge in Ohio that the management of the Standard Oil Co. of Ohio which retired early this year, followed the policy of letting costs govern its prices with the result that railroad or bulk service stations sprang up by the dozens in the state and a great many persons unfamiliar with the oil business engaged in marketing. Prices were cut because there was a long margin between tank car and tank wagon prices.

This year the larger companies have paid less attention to their operating costs as a basis for setting retail prices but have gone out to meet the competition, and some of the innocent bystanders have been temporarily trapped in the conflict of the market. These bystanders have feared for their business lives and these fears have formed the basis of their complaints of unfair trade tactics.

Scioto Petroleum Co. Asks Hearing

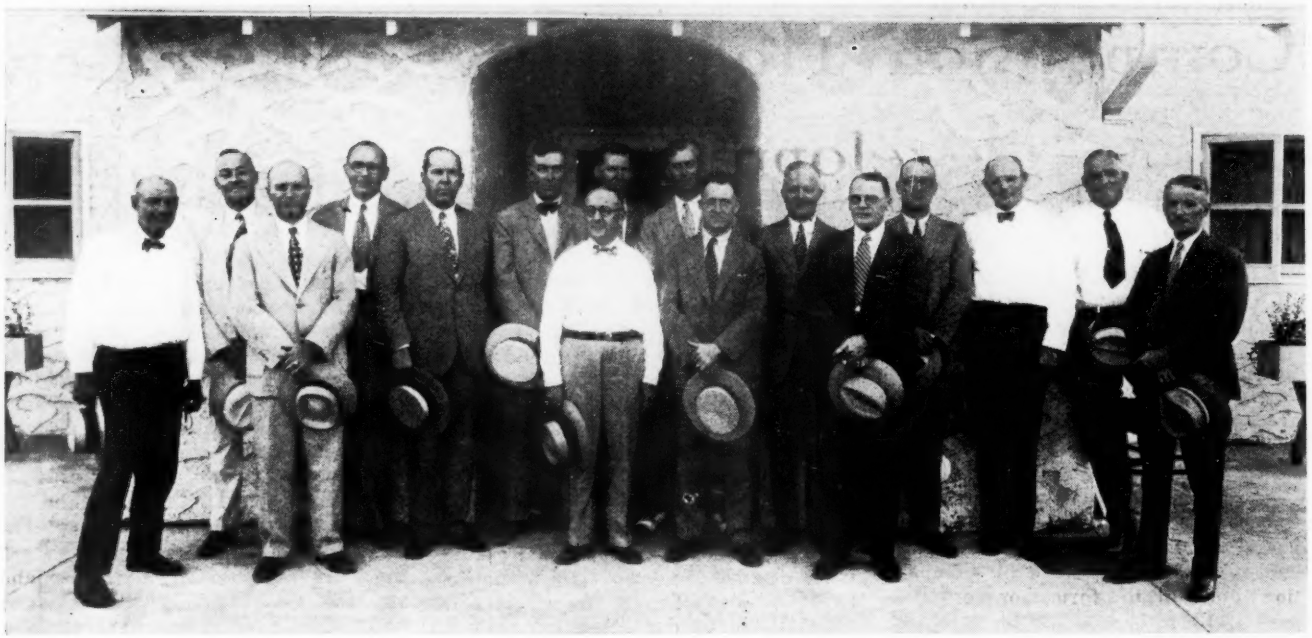
COLUMBUS, Ohio, Sept. 10.—The Scioto Petroleum Co., defendant in the suit brought by the Ethyl Gasoline Corp., New York, seeking to enjoin it from using a trademark claimed to be an infringement of that of Ethyl gasoline has filed its answer and asked for a hearing.

Judge Benson W. Hough, who recently returned to the bench, is expected to set the date for hearing shortly.

W. T. Fassig, president of the Scioto company, says his company had given up the use of the emblem in question before Judge Hough issued a temporary injunction to this effect.

The court did not enjoin use of the word Ethylene in connection with the sale by the Scioto company of a treated gasoline.

On motion of the defendant, the court ordered from the petition remarks as to the quality of the gasoline sold under the device it claims is an infringement.



Directors of the International Petroleum Exposition who live in Tulsa and vicinity last week inspected the work that has been done on the grounds. From left to right: B. E. Horrigan, oil producer; A. F. Bourne, Oklahoma Iron Works; William Holden, secretary chamber of commerce; Alf G. Heggen, Oil Well Improvements Co.; W. G. Skelly, president of the exposition; D. D. Wertzberger, Wertzberger Derrick Co.; Frank Hinderliter, Hinderliter Tool Co.; J. M. Post, Mid-Continent manager Oil Well Supply Co.; W. M. Bovaird, Bovaird Supply Co.; J. Burr Gibbons, general manager exposition; Brooks Gutelius, Mid-Continent manager Continental Supply Co.; W. A. Schlueter, Refinery Supply Co.; C. P. Dimit, general superintendent, Gypsy Oil Co.; Clyde Alexander, vice president, Phillips Petroleum Co.; A. W. Leonard, vice president, Devonian Oil Co.; P. D. Hayes, Exchange National Bank

"Bigger and Better", Say Directors

20 Foreign Nations to Send Delegates to Tulsa Petroleum Exposition, to be Held Oct. 20 to 29—Grounds Enlarged 35 Per Cent

TULSA, Sept. 12

IN PREPARING for the largest exposition of a single industry in history, the directors of the International Petroleum Exposition and Congress have advanced the already imposing physical properties of the World's Fair of the oil industry 35 per cent for this year's petroleum show, an official report shows.

Special emphasis is to be placed upon the international aspect of the exposition. In the first week of September the exposition office has received notice from more than 20 foreign nations that delegates will be sent. Representatives are also promised, following the invitation sent out by President Coolidge, from the state departments of other nations.

Where last year the street cars stopped more than a block from the exposition grounds, this year the street railway loop comes right up to the north entrance of the grounds and the regular rates now applying for city buses will be in effect. There will also be stations for buses and taxis.

Parking spaces will easily accommodate as many automobiles as a day's attendance, maximum, of 50,000 may be gauged to represent. There are so many factors pointed out in the report of the exposition directors which assure a much greater attendance than last year, when there were 100,000 visitors in spite of the fact that rain fell during eight of the nine days of oil exposition, that men interested in the passenger traffic end of the proposition are engaged in making special plans.

Recently more than 50 officials of 25 of the larger railroad systems in the United States and Canada met in Tulsa with officers of the International Petroleum Exposition for the purpose of considering plans for handling the heavy passenger traffic expected during the dates of the exposition.

Seven special trains are scheduled to be made up at different strategic points in the United States. Two will leave from New York City, one covering the Great Lakes territory to Chicago, and the other taking in the territory in the southern direction, down through Missouri. Two will leave from points in Texas, one along the western portion and the other taking in the eastern side of the state. Another will leave Minneapolis and St. Paul. One will make up from Los Angeles and the seventh will start from New Orleans.

The administration building has been completely remodeled. In it this year will be found branch offices of the Western Union and Postal Telegraph companies, of the Southwestern Telephone Co., including a P.B.X. board with three trunk lines to the city office and sound-proof booths for long distance telephoning; of the city post office, and special offices of the express company and freight departments. The information bureau and the registration and validation desks will be located in this building.

In the scientific and technical building will be found the magnetometer, the seismograph, the torsion balance, the pendulum, aerial maps, diagrams and charts and other aids in diagnosing the drilling site.

Special conventions will be held by the following organizations during the exposition: the petroleum division of the American Institute of Mining and Metallurgical Engineers, the American Association of State Geologists, the Mid-Continent Oil & Gas association, the Old Timers, veterans' club, and other groups.

Local Chapters to Extend Production And Development Work of A.P.I.

By Paul Wagner
N. P. N. STAFF WRITER

GALVESTON, Sept. 6

STANDARD practices in development and oil production will be brought closer to the individual field through adoption of a plan favored by the Texas-Louisiana-Arkansas engineering group of the American Petroleum Institute.

That organization, meeting at Galveston, Sept. 5-6, adopted a resolution looking to formation of local chapters of the tri-state division for discussion in the field of problems arising there.

The plan contemplates regular but informal gatherings at which engineers and production men would thresh out perplexing questions on the basis of field experience. Data thus developed could be later embodied in papers for presentation at the larger tri-state division meetings which will be held twice yearly.

Besides giving an opportunity for free discussion of problems and affording a better basis of fellowship, the monthly meetings of local chapters, when inaugurated, will give enlarged perspective to men who are unable to get away from the fields for the larger division meetings.

The suggestion of local chapters was offered by W. W. Scott, chief petroleum engineer of Humble Oil & Refining Co., Houston, who is also chairman of the division committee on production practice. It was voted on favorably after general discussion on motion of A. S. Feild, district superintendent at Wink, Tex., for Roxana Petroleum Corp.

R. S. Haseltine, vice president and general manager of the Guiberson Corp., Dallas, made the point that men in local fields are mostly acquainted and will feel free to talk, whereas they might be reticent in larger meetings.

Carl A. Young, executive secretary of the development and production engineering group and standardization director of the American Petroleum Institute, said that eventually he believed there would be no field in which the proposed work would not be covered.

Mr. Young also voiced the thought that the plan seems to provide the solution of field problems confronting the industry. If a specific problem is uppermost, such as a lack of understanding of A.P.I. tubular goods, local meetings will afford a vehicle for dissemination of information and make for clearer understandings than would be possible otherwise.

THE following papers delivered at the Galveston meeting are published in this issue of NATIONAL PETROLEUM NEWS: *"Analysis of Pumping Problems Facing Winkler Field Operators," by E. H. Schroeder, on page 42; "Special Well Hookups Designed for Winkler Field," by A. S. Feild, on page 44; and "Field Lubrication of Wire Line," on page 48. The paper by D. B. Harris, on "A.P.I. Standard Casing Tubing Drill Pipe Used in Arkansas-Louisiana" will be published in the Sept. 19 issue.*

Use of casing, drill pipe and tubing made to A.P.I. specifications was discussed in an important group of papers presented at the Galveston meeting. The growing tendency to specify A.P.I. materials was noted, but examples were given of conditions under which progress had been slow.

W. D. Brookover, vice president and production head of the Panhandle Refining Co., Wichita Falls, said "the lack of knowledge of many operators regarding A.P.I. standards and specifications is surprising.

"Most of them (in the Greater Wichita Falls district) seem to purchase that which best fits their purse and is most readily obtainable, without giving any thought to A.P.I. specifications.

"A few of the smaller operators, including the Panhandle Refining Co., and most of the major companies, are using the A.P.I. 8⅝-inch and 7-inch, outside diameter, casing. It probably will be some time before the larger sizes of A.P.I. casing will be used extensively, because of a considerable amount of old style casing being on hand and, further, because it will be necessary to discard elevators, casing tongs, spider slips and fittings now in use.

"Nevertheless, it was found among larger operators that an effort is being made to adopt A.P.I. standards 100 per cent. In fact, one major company sold considerable old style casing of different sizes on the second hand market in order to use A.P.I. material thoughout. This company intends to increase the weight per foot of the 13⅜-inch casing, since its use of the 48-pound weight set at approximately 1000 feet has not been found entirely satisfactory.

"The purchasing agent of another company stated his company is now in good position to adopt A.P.I. casing in its entirety and probably will do so.

E. H. Schroeder, chief engineer, Southern Crude Oil Purchasing Co., Shreveport, spends much of his time now in west Texas. His company, which is stock-controlled by Standard Oil Co. of Indiana, is among the most extensive operators in Winkler county

"SUPPLY stores in the Wichita Falls district are not carrying A.P.I. casing in other than 7-inch and 8⅝-inch outside diameter sizes, for the reason there is not sufficient demand for it."

Mr. Brookover said complete adoption of A.P.I. standards could be helped immeasurably by active cooperation of supply men because of their close contact with operators. Continuing, he said:

"Use of A.P.I. casing can be greatly extended if supply stores will stock the necessary tools for A.P.I. sizes that differ in outside diameter from old sizes. Analysis will show these changes in outside diameter are comparatively few in sizes under 16-inch outside diameter, i.e., 5¾-inch O.D., 8⅛-inch O.D. and 13⅜-inch O.D."

Mr. Brookover said that in his opinion use of A.P.I. tubing can be made 100 per cent if the pipe manufacturers and supply stores will stock A.P.I. material only. There is no change in the sizes between old style tubing and the A.P.I., the only differ-

D. B. Harris, division superintendent of the Humble Oil & Refining Co., at Shreveport, is one of the best known of the younger group production executives in the southwest

ence being that standard threads have been adopted for the plain and external upset. He finished his discussion by saying the sooner all operators use the same thread on similar material the sooner they can enjoy the advantages of complete interchangeability.

In the opinion of D. B. Harris, division superintendent of Humble Oil & Refining Co., at Shreveport, there appears to be no objection by north Louisiana and south Arkansas operators to A.P.I. standards on casing.

Mr. Harris reported users well pleased and said "those who have not heretofore specified A.P.I. casing pretty generally advise they have no objection to specifying it in the future."

He believes educational work would be beneficial, saying that possibly posting of placards in supply houses showing A.P.I. casing sizes would be helpful in showing that the newer standards cover all requirements. He reported virtually all major companies in the territory have adopted, or they are soon to adopt, A.P.I. casing standards.

A.P.I. drill pipe is being ordered exclusively in north Louisiana and usage will be 100 per cent, he indicated, as soon as old stocks have been worked out. Supply companies report demand for old style tubing has about passed and all stock carried in the future will be of A.P.I. specifications.

Mr. Harris' paper is published in detail on another page of this issue of NATIONAL PETROLEUM NEWS.

In Gulf Coastal Texas and Louisiana, problems that are peculiar to the salt dome region arise. These were discussed by James S. Abercrombie, Houston, president of the J. S. Abercrombie Co., producers and drilling contractors.

Mr. Abercrombie had found, he said, that two of nine companies canvassed are using and have standardized on A.P.I. casing. The remaining seven are using A.P.I. casing in some sizes but not in small strings, due to difference of opinion regarding threads per inch and taper per foot among other things. Cost of the larger sizes of casing strings was described as an item.

All of the nine companies were found to be using A.P.I. drill pipe and tubing. A few companies were described as using standard plain tubing on their shallow wells but they specify external upset on all deep holes.

"One or two of these producers," said Mr. Abercrombie, "complained of the added hazard of sanding up and sticking their tubing when using external upset, but they qualified complaints by stating that in spite of this hazard they would rather use the external upset, due to the added strength given them in this particular type of tubing."

In conclusion Mr. Abercrombie said:

"All the operators are heartily in favor of the work the A.P.I. is doing and the majority of them say that as soon as practicable they will come to its standards. They all feel that by using A.P.I. tubular goods they will obtain an article that is very closely inspected, is made of the best material obtainable, has better threads that are cut to closer tolerances and will give them interchangeability.

"All of them admit that the 10 thread per inch, ⅜-inch taper on all 8⅝-inch casing, and under, will give them a stronger and tighter joint; however, they will have to be convinced that the 10 thread pipe is just as easy to handle in the field as the eight thread, ¾-inch taper casing which they are now using."

W. C. Thomas, production manager of the Vacuum Oil Co., at Houston, dates his experience back to early development of the Gulf Coastal region. Before taking charge of the Vacuum's field work in the southwest he was with the Humble Oil & Refining Co.

Methods of completing wells in southwestern fields were discussed by A. S. Feild, Roxana Petroleum Corp., who dealt with Winkler county, west Texas; W. W. Scott, chief petroleum engineer, Humble Oil & Refining Co., Gulf Coastal territory; R. W. Lowe, Standard Oil Co. of Louisiana, and R. E. Whiting, Atlantic Oil Producing Co., on north Louisiana and Arkansas.

Special papers included discussion by E. H. Schroeder, Southern Crude Oil Purchasing Co., Shreveport, on the problem of pumping equipment for use in Winkler county, Texas; M. (Bink) Manning, Gulf Coastal general superintendent of Humble Oil & Refining Co. described use of casing protectors on drill pipe; and W. C. Thomas, production manager of Vacuum Oil Co., Houston, dealt with wire line lubrication.

St. Louis Pool Extended Nearly Mile East

(By Telegraph)

TULSA, Sept. 10.—With an initial production of 175 barrels per hour from nine feet of sand drilled, the Mid-Continent Petroleum Corp., No. 1 Guinn extends the Wilcox sand area of the St. Louis pool three-quarters of a mile to the east. The test, which is in the SW SE NE of Sec. 20-7N-5E, found the Wilcox at 4225 feet.

Production for the 24 hours ending at seven a.m. Sept. 10 amounted to 2920 barrels.

Structurally the well is six feet higher than the big well of the Independent Oil & Gas Co., in the NW NE SE of 19-7N-5E and 50 feet higher than the Magnolia No. 1. Fyke which is producing from the Simpson sand a quarter mile southeast of the new well.

Seminole Can Do 334,283 Barrels

(By Telegraph)

TULSA, Sept. 11.—The result of the first day's full production test, under the new restrictive order of the state corporation commission, shows Greater Seminole making 334,283 barrels for 24 hours ended the morning of the 11th.

Little River made 129,204 barrels, a gain of 27,000 barrels from the previous day, indicating that much shut in under proration.

California to Call On Santa Fe Springs Operators to Conserve Gas

By W. E. Green
N. P. N. STAFF WRITER

SAN FRANCISCO, Sept. 8

THE California conservation committee—known as the governor's committee—will call a meeting of operators interested in the development of the new deep sand at Santa Fe Springs, it has been indicated by Fred G. Stevenot, chairman of the committee. The calling of such a meeting is understood to be approved by the larger operators in the Santa Fe Springs field.

The new deep sand at Santa Fe Springs promises a large production of oil in addition to an extremely large volume of gas. The great majority of the companies and individuals active in this field want to see its development held back until there is need for the oil. They feel, however, that a drilling program is being forced upon them.

More than a year ago George F. Getty started to drill a test to see what greater depths at Santa Fe Springs held in the way of oil and gas; but he was prevailed upon to place his drilling well on production in the upper zone.

About four months ago, Wilshire Oil Co. started another deep test in the midst of the townlot area, and its officials refused to defer their drilling activity.

Wilshire brought in a well around 6000 feet in depth, for 3500 barrels of oil in addition to around 3,500,000 cubic feet a day. No information as to depth, exact amount of oil being produced or any other data, has been given out by the company.

The completion of this well immediately forced four offsets. Every offset called for at least another offset, until the new locations have covered almost the entire townlot area. It was a question of drilling or permitting your neighbor to get the oil. Hence the feverish drilling campaign at a time when practically every operator would have preferred to wait.

In fact, the campaign now underway has brought about a serious situation in southern California right at the time when everyone was working to conserve the gas of the state, and at the same time to prolong the life of the various oil fields.

State authorities are working now with the executives of the leading oil companies to find a workable solution of the great problems arising. It is felt that the situation at Santa Fe Springs is of sufficient importance to cause everyone to work on some plan for regulating production there. If they are successful the plan adopted at Santa Fe Springs may be modified to suit various conditions, for other sections of the state.

At present, there are 29 operators in the field with production in the Meyer zone, just above the new deep sand. A total of 40 operators are interested in the field, either with production, as holders of leases or now taking part in the drilling campaign.

These operators will be invited to meet with the governor's committee at Los Angeles in the near future. It is believed that, at least, the meeting will indicate the percentage of operators willing to enter into some kind of a co-operative agreement.

If the percentage willing is not sufficient, then the matter of what must be done next will be given attention.

It has been suggested in a casual way that it might be possible to form districts similar to those organized to handle irrigation problems, where a majority rules and a minority is not permitted to dominate.

If it should be decided to attempt such a plan, certain legislation will be necessary. It is fairly certain in any event, that some legislation having to do with the oil business will be presented to the state legislature in January. The governor's committee and leading oil men probably will have a program outlined, based on facts and needs, and no foolish legislation is expected.

Mr. Stevenot continually stresses the fact that the state authorities are only interested in the oil business to the extent of making sure that the state's resources be not wasted. It is generally understood that the state authorities do not think they have the right to regulate production of oil.

The state now has a law against wasting natural gasoline, but certain legal authorities have held that the law is not constitutional and could not be enforced.

Due to waste of gas at Ventura avenue, Governor Young, some months ago issued a statement calling upon interested oil operators to get together and remedy the situation. A number of the leaders were asked to meet with those named by the governor on what has become known as the governor's committee.

The oil executives were then asked to name a general committee to represent the oil industry and work with the governor's committee. This committee was appointed and since that time several subcommittees have been named. Reports are made at frequent intervals and the cooperative movement at Ventura avenue is gaining ground.

As a result, wells at Ventura avenue have been pinched back 20 per cent to conserve gas. Repressuring has been experimented with at Coyote, Dominguez, Seal Beach and Montebello. At Coyote, an attempt is being made to store oil in partially depleted oil sands.

Now it is proposed to take some of the gas from the deep sand at Santa Fe Springs and pump it into the Meyer zone in the same field, as a repressuring and storage experiment.

The plan is still tentative and nothing of a permanent nature can be decided upon until more wells are completed in deep sand to give the leaders a better idea of conditions. The deep sand area may not be as large as many expect, the sand may not be deep as is supposed and in fact, there are many possibilities which only actual tests can disprove or substantiate.

A check of the field activity at Santa Fe Springs early this week showed 5 locations, 23 building rigs, 18 rigs, 22 rigging up, 92 drilling wells, 7 redrilling jobs and 3 old wells being deepened. This gives a total of 170 operations ranging from locations to drilling wells. Counting the redrills and deepening jobs, there were 102 strings of tools running at date the check was made.

In another month it is expected at least 200 wells will be drilling and, if the deep sand proves to underlie most of the field, at least 300 wells will be drilled. It has been estimated each well will cost close to $100,000. Approximately 135,000 barrels of daily production is now shut in over the state, more than half of which is heavy oil, which is of low value and not needed. This shut in movement was brought about through cooperative methods. But there is no oil shut in in townlot fields.

Along the Air Lanes

INAUGURATION of air mail service between the United States and Mexico, Oct. 1, will save more than three days delivery time on letters between New York and Mexico City. At present it requires six days for delivery by ordinary first class mail.

Corresponding reductions in mail delivery time will apply to and from other points in United States and Mexico.

American air mail service has been authorized from Laredo to San Antonio to connect with the lines in Mexico, which last mentioned will also serve Queretaro, San Luis Potosi, Saltillo and Monterrey.

For the present, the Laredo-San Antonio line will connect with the Fort Worth-Dallas air mail north to Chicago, New York and intervening stops. The plan to carry Mexican mail by way of Houston and New Orleans has been abandoned for the present.

Rates on air mail from the United States to Mexico will be 20 cents for each ounce or fraction thereof. Corresponding rates from Mexico will be 75 centavos (about 37.5 cents at the prevailing rate of exchange) for each 20 grams or fraction thereof.

* * *

Regulation of air transportation to bring it under the common carrier rules of Texas will be proposed to the Forty-first legislature, according to Chairman C. E. Gilmore and Lon A. Smith of the Railroad Commission of Texas.

The law would provide, according to Mr. Smith, preventing inexperienced flyers taking the air for commercial flying, would prohibit use of untested planes, provide permits to be issued only to well trained pilots, prevent use of airports except by qualified persons, name the altitudes for planes flying over cities and provide for conveniences to passengers.

Texas air lines now extend from Fort Worth and Dallas to Waco, Austin, San Antonio, Houston and Galveston, with a branch to open from San Antonio to Laredo, Oct. 1, in connection with a line to Mexico City. Another line connects Houston with New Orleans. Air service from El Paso east and from Amarillo to Denver are projected, all the lines mentioned to carry passengers.

* * *

R. F. Garland, prominent oil operator and royalty owners—joint discoverer with the Independent Oil & Gas Co. of Wilcox sand production in the original field—left Sept. 6 with Pilot Fred Lord from the municipal airport at Tulsa for St. Louis, Kansas City and Wichita in a Stearman ship. Mr. Garland, with Al Henley, well known pilot, owns the Stearman distributing agency in Tulsa and adjacent territory.

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Five officials of the O. C. S. Manufacturing Co., Coffeyville, Kans., toured the Seminole field by air during the week.

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The importance of Wichita as an airplane manufacturing center is indicated by the delivery during the week ended Sept. 3, of 27 ships by four companies. Among the purchasers was W. H. Emery, Jr., of Bradford, Pa., who bought a Travel Air.

* * *

J. C. Axelson, of the Axelson Machine Co., Los Angeles, stopped at Wichita en route from Washington and made trial flights in Wichita made ships.

* * *

D. E. Buchanen, of the Chestnut & Smith Corp.; M. F. Waters, of the Smith Separator Co.; A. W. Leonard, of the Devonian Oil Co.; A. Klotz, pilot of the Naturaline Co. of America and Fred Foster, Naturaline salesman, left Sept. 3 in a Buhl Airsdan, owned by the Chestnut & Smith Corp., for a tour of Texas fields en route to Los Angeles.

Aviation Division Formed By Standard (N. J.)

CLEVELAND, Sept. 8

AN AVIATION division has been created by the Standard Oil Development Co., the technical unit of the realigned Standard Oil Co. of New Jersey interests. It has been placed in charge of Capt. E. E. Aldrin, who resigned in July as assistant executive of the material division of the U. S. Army Air Corps at Dayton, O.

The new division will work with the other units of the Standard of New Jersey family to foster this growing branch of transportation and to develop its markets. Closer contacts with users of aviation fuels and lubricants are to be established and economical supplies for commercial air transportation are to be developed.

Two airplanes have been ordered for use of the division. One is a new model Curtiss monoplane known as the Robin. The other is a Lockheed Vega monoplane. The Robin is a small craft powered with a Challenger engine of the radial type. Its cost is moderate and with its ease of handling the Standard interests believe it will become popular and its use widespread. It has fuel capacity for six hours' cruising. It carries a pilot and two passengers.

The Lockheed Vega is a much larger ship, and has a cruising range of 700 miles. It is powered with a 425-horsepower Pratt & Whitney Wasp engine. The plane has a maximum speed of 165 miles per hour and a cruising speed of 135 miles per hour.

These planes are to be delivered by early fall and will be used in experimental work. The Standard of New Jersey already has extended motor fuel and lubricant service over its territory of seven states and the District of Columbia.

Capt. Aldrin brings to the new division a background of considerable experience and accomplishment. He was born in Worcester, Mass., in 1896, and was graduated at 19 from Clark university, Worcester. He spent a year at Worcester Polytechnic Institute, taking a graduate course in general science. He spent another year specializing in aeronautical engineering at the Massachusetts Institute of Technology, which awarded him a master of science degree in 1917 and a doctor's degree in 1928.

From 1917 until he resigned last July, Capt. Aldrin was an officer in

CAPT. E. E. ALDRIN

Former Army Air Corps officer who is in charge of the new aviation division of the Standard Oil Development Co., Standard of New Jersey technical subsidiary

the Army Air Corps. From 1917 to 1919 he was an instructor in the Army-Navy School of Aeronautical Engineering. He then was assistant commandant of the Engineering School at Wilbur field, Dayton. In this capacity he was responsible for the technical training of Air Corps officers.

He had 1000 hours of flying to his credit and has flown in the Philippines, China, Siam, England, France, Germany, Holland and Belgium besides in the United States.

He is serving his second term as chairman of the aeronautic division of the American Society of Mechanical Engineers, which he helped to organize in 1920, and of which he was secretary for three terms and a member of the executive committee.

As assistant executive of the material division of the Air Corps, Capt. Aldrin was in charge of the procurement, maintenance and supply of all aeronautic equipment of the army.

Coming Meetings

National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 19, 20, 21.

Oklahoma Oil Jobbers Association, Oklahoma City, Okla., Huckins Hotel, Sept. 28, 29.

North American Gasoline Tax Conference, Peabody Hotel, Memphis, Tenn., Oct. 1, 2, 3.

National Safety Council, Petroleum Section, Hotel Pennsylvania, New York City, Oct. 1 to 5.

Big Four State Jobbers, Kansas City, Mo., Oct. 3, 4, 5.

American Oil Men's Association, Hotel Statler, Detroit, Mich., Oct. 9, 10, 11.

Pennsylvania Independent Oil Men's Association, Penn Harris Hotel, Harrisburg, Pa., Oct. 15, 16, 17.

Wisconsin Petroleum Association, Green Room, Schroeder Hotel, Milwaukee, Oct. 17.

Petroleum Division, A. I. M. E. Tulsa, Oct. 18 & 19.

International Petroleum Exposition, Tulsa, Oct. 20 to 29.

California Natural Gasoline Association, Los Angeles, Nov. 13, 14.

Independent Oil Men of America, Stevens Hotel, Chicago, Nov. 19, 20 and 21.

American Petroleum Institute, Stevens Hotel, Chicago, Dec. 4, 5, 6.

Nebraska Independent Oil Men's Association, Municipal Auditorium, Hastings, Neb., Dec. 4, 5, 6.

Wisconsin Petroleum Association, Schroeder hotel, Milwaukee, Dec. 12.

Credit Men Rush Meeting Through In Two Vigorous Days

CHICAGO, Sept. 6

W. A. RYAN, credit manager of Mid-Continent Petroleum Corp., Tulsa, this week was elected chairman of the board of governors of the petroleum refiners' division of the National Association of Credit Men. The division concluded its annual convention at noon, Sept. 6, in Chicago. Most of the meetings were held in one of the private assembly halls in the Palmer House.

With characteristic scrutiny of the elements of time and money, the credit men decided (shortly after they assembled) to use for sterner business that part of the program dedicated to recreation. So they hurried through their program and finished up by noon the third day.

Six scheduled speakers were not able to attend the meeting and not all of them sent their papers to be read by somebody else, and that also contributed to shortening the program.

E. B. Moran, manager of the central division for the national association, acts as secretary of the refiners' division. The convention re-elected him to continue in that same capacity. The last session of the convention was held in his office at 33 South Clark street, Chicago. Mr. Moran says the Tulsa bureau of the refiners' group will continue as before under the same local management.

The six other credit men elected to the board of governors are H. R. Wakefield, credit manager of the Sun Oil Co., Philadelphia; K. R. Hankinson, assistant treasurer of Tide Water Oil Co., New York City; R. E. Holcomb, assistant treasurer of Skelly Oil Co., Tulsa; F. R. Seleine, general credit manager of Shaffer Oil & Refining Co., Chicago; E. C. Claiborne, credit manager of Derby Oil Co., Wichita, Kan., and E. F. Harrell, credit manager of Deepwater Oil Refineries, Inc., Houston.

Addresses were unusually short. Discussions that followed the technical papers were confined to asking and answering a few pertinent questions. The election was the feature of the meeting, and it was effected without any playing at politics. Besides the election of the new board and the word of outlining the group's activities for the coming year, the following talks were delivered:

"Report of the division's activities," by E. B. Moran, manager.

"Can credit men remake the policies of the petroleum industry?" by W. A. Ryan, who later was chosen chairman.

"Methods and procedure for opening a new account," by Robert R. Cox, treasurer of Kanotex Refining Co., Arkansas City.

"Terms on tank car gasoline," by L. R. Cook, credit manager of Marland Refining Co., Ponca City.

"How should credit outside of the home office be handled?" by H. R. Wakefield, credit manager of Sun Oil Co., Philadelphia.

"Service and bulk station credits," by C. D. Votrian, credit manager of Barnsdall Refineries Inc., Tulsa.

"How can I ship more petroleum products and have less credit loss?" by G. C. Goller, Lubrite Refining Co., St. Louis, and E. C. Claiborne, Derby Oil & Refining Co., Wichita.

"Effective methods for handling collections," by J. F. McLaughlin, credit manager of Indian Refining Co., Lawrenceville, Ill., was read by F. R. Seleine, of Shaffer Oil & Refining Co., Mr. McLaughlin not being present.

The meeting was closed with a general discussion of business conditions for the coming year in which practically all took part. The discussion was led by M. S. Riglander of Phillips Petroleum Co., Bartlesville, Okla.

Remarking Laboratory Glassware

By Ralph E. Goode*

THE white lines on laboratory graduates after continued use tend to fade and the markings become dim and hard to read, especially by electric light. This is true particularly of the 100-cubic centimeter receiving flasks used in connection with the Engler distillation test.

Method of touching up these lines, which can be done in a few minutes by any laboratory man, consists in using a whitewash made of a solution of calcium oxide in water (lime water). The lime water is mixed with solid calcium hydroxide making a paste heavy enough to fill the cut lines around the graduates which will stand out in white relief and which can be easily seen.

Treatment of the graduates with this solution will give the best results if the glassware is first thoroughly cleaned of any adhering dirt or oil film. The whitewash may be applied with a suitable brush or simply rubbed well into the graduation marks with the fingers.

*Chemist, American Refining Co., Wichita Falls, Tex.

Review of Late Production News

DAILY average crude production in the country, which passed the two and one-half million barrel mark last week for the first time in a year, fell back during the week ended Sept. 8. Output was 2,494,200 barrels, a decrease of 9050 barrels from the week ended Sept. 1.

Crude oil imports were at the rate of 309,286 barrels daily, a gain of 95,001 barrels over previous week's imports. This brought total new crude supply to 2,803,486 barrels daily average, or about 86,000 barrels more than week ended Sept. 1, according to the figures of the American Petroleum Institute.

Winkler county in West Texas fell off 10,600 barrels daily average. Seminole area, in Oklahoma fell off 4600 barrels, to a daily average of 308,700 barrels for the week ended Sept. 8. Practically all this decline was in the Little River field. St. Louis pool in Oklahoma gained 7950 barrels, with the total in Oklahoma reaching 706,050 barrels, an increase of 2250 barrels over previous week.

Howard county in west Texas gained 5100 barrels, that being the largest gain in any field for the week ended Sept. 8. Pecos county fell off 3300 barrels.

Long Beach and Ventura Ave., in California gained 3500 barrels and 4000 barrels respectively.

Oklahoma-Kansas

THE order of the state corporation commission limiting Oklahoma production to 700,000 barrels a day will be lightly felt by the great majority of operators at the outset.

Aside from Little River, in Seminole district, where an old restrictive order is in effect, output of the eight flush pools whose output comes under the restrictive order is slightly under their allotted amount. There are about 25,000 barrels shut in in Little River.

Operators in Oklahoma, for the most part, believe the new order, effective Sept. 10, will place the burden of what restrictive effort is necessary on all fields in the state equitably.

The St. Louis pool, of eastern Pottawatomie county, Okla., has what appears to be worthwhile extensions to the south and east. Gypsy Oil Co. and Phillips Petroleum Corp. have wells in the northwest quarter of 30-7-5, which extend the limit of the field a quarter of a mile south. The Mid-Continent Petroleum Corp.'s No. 1 Guinn, in 20-7-5, with an initial of 175 barrels an hour in the Wilcox sand, extended the Wilcox sand area three-quarters of a mile east.

Attention was drawn to Pottawatomie county by another well, that of the Pure Oil Co. in the SE SW SE of 18-8N-5E in the Misener sand at 4117 feet. This well gaged 2532 barrels in an 18-hour test. It is seven miles southwest of the Mission pool. The well is to be pinched in until the first offset is completed.

California

WHILE there is a slowing down in the rate at which locations are made at Santa Fe Springs, Sept. 8, 102 strings of tools were running. Six were drilling below 5000 feet. There are still a large number of wells rigging up.

The move to organize operators at Santa Fe Springs into a cooperative body to conserve the gas from the new deep zone has progressed to a point where operators will probably be called together around Sept. 20 at Los Angeles. The governor's gas conservation committee, formed last winter, is likely to bring its influence to bear on developments at Santa Fe Springs.

The Long Beach field continues to bring in good wells. Two rigs are being erected at Elwood, the new field twelve miles from Santa Barbara. There is considerable drilling at Ventura Avenue, as well as Long Beach.

Texas, New Mexico, Louisiana

SUN OIL CO.'S B-2 well in the Albercas area of the general Laredo district is the largest completion ever made in any of the chain of fields located along the Reynosa escarpment in Webb, Zapata and Jim Hogg counties, Texas. It came in at 2172 feet, making around 3000 barrels under one-half inch choke. Laredo district wells generally are small, or their flush production settles rapidly, but the present completion continued to hold up several days after it was made.

The five wells on the Boggy Creek salt dome, which straddles the Anderson-Cherokee county line in interior East Texas, were averaging 4475 barrels daily at the end of the week. They are in a controlled area developed by Humble Oil & Refining Co., for the joint account of itself and the Rio Bravo Oil Co., Southern Pacific subsidiary.

An oil showing five miles south of the Hendricks field, in Winkler county, will prove an extensive area in West Texas if the test is finally completed for a well. It is in Sec. 50, Block F, and is being drilled by Sid Richardson, Frank Kelsey and the White Eagle Oil & Refining Co. The well tested 1,000,000 cubic feet of gas, which blew the tools about 100 feet up the hole at 2814-2815. After removing tools and running bailer the hole was found to have bridged 200 feet off bottom. After setting several hours the test made one bailer of oil per hour, showing no water.

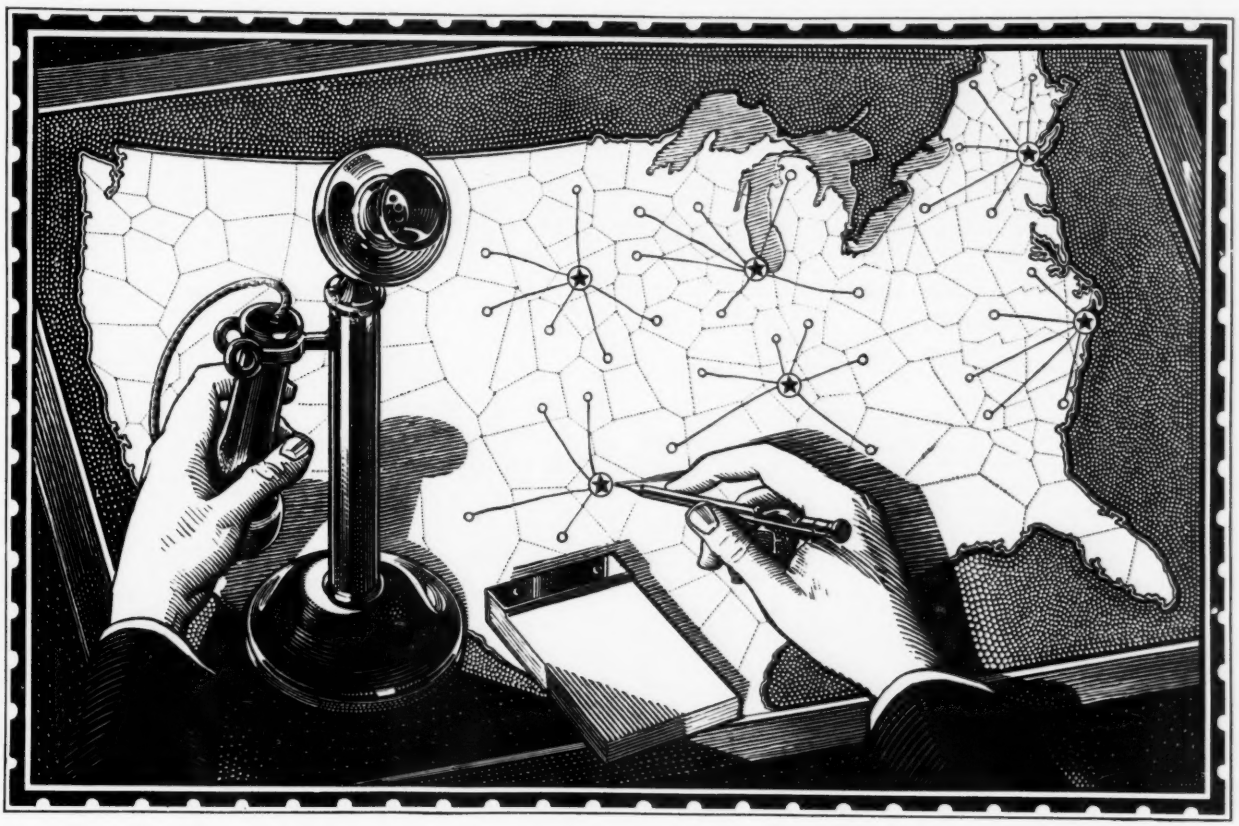
Wyoming, Montana

IT IS possible the Producers and Refiners Corp. gas well at Muskrat, 100 miles west of Casper, may be an oil producer with deeper drilling. Three strings of tools in the hole prevent further drilling operations now.

Texas Pacific Coal & Oil Co. is putting in an 80,000-barrel tank at Conrad, Mont., to take care of crude run from the Pondera field, four miles from Conrad. This company now has two small tanks at Conrad. The field has 16 wells with nearly 2000 barrels of production.

Operators in the Oregon Basin field in northern Wyoming have reached an agreement not to produce wells in the southern part of the field.

This National key town map Free to Anyone interested in cutting Costs



An Advertisement for Bell Long Distance Telephone Service

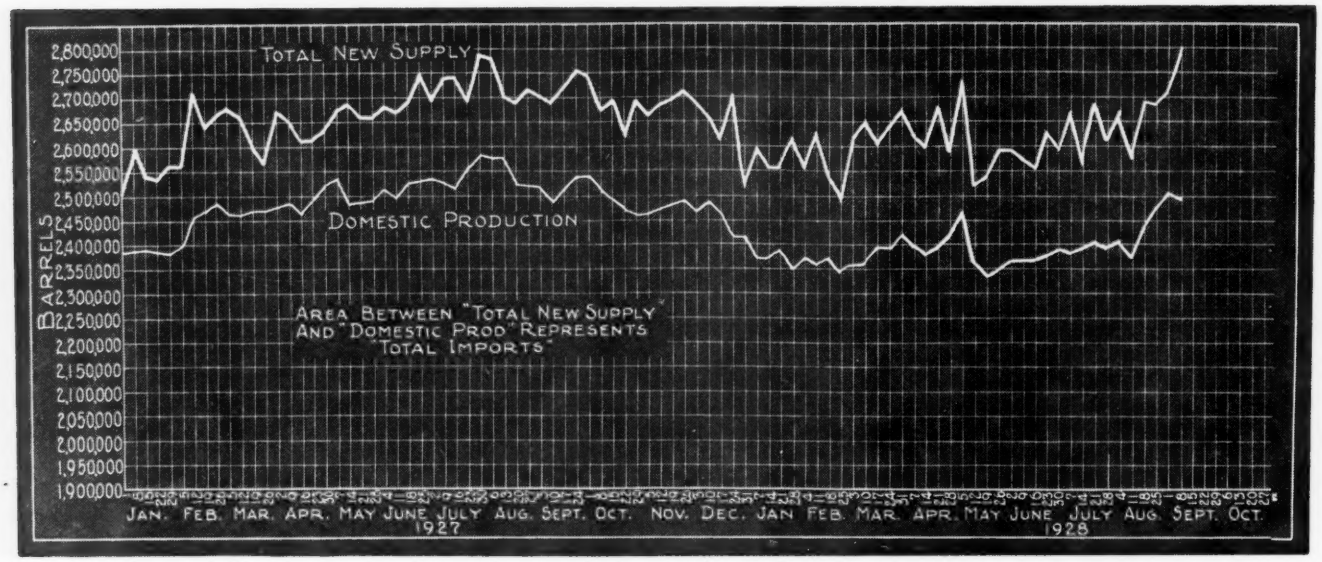
To LOWER distribution costs, business is turning to the key town method of buying and selling by telephone. By this plan each representative can "travel" farther, reach more people, buy and sell more—and cut expenses.

The national key town map, showing key towns and their calling areas, is now ready. This and regional maps may be obtained at any Bell Telephone business office. They are free.

Key town plans work like this. The sales or purchasing representative goes to the key towns in person. From each he makes his contacts by telephone with customers and prospects in that area. Expensive visits in person are made less often; yet by telephone more frequent and up-to-the-minute relations are maintained.

Related telephone services supplement the key town plan. Classified business telephone directories furnish lists of prospects, sequence calling lists save hours of time, the Bell System credit plan makes it possible to have bills for calls sent to home offices—avoiding the carrying of cash and helping in keeping records of contacts. Thus, Long Distance can be custom-made to fit your selling or buying problems—to increase business, yet lower costs. A call to your Bell Telephone business office will bring a copy of the national key town map to you. . . . . *Number, please?*

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Sept. 8	Sept. 1
Production east of Rockies	**1,858,400**	**1,874,250**
Decrease		**15,850**
Total production in U. S.	**2,494,200**	**2,503,250**
Decrease		**9,050**
Crude oil imports	**309,286**	**214,285**
Increase		**95,001**
Total crude supply	**2,803,486**	**2,717,535**
Increase		**85,951**

OKLAHOMA

	Sept. 8	Sept. 8
North Braman	3,000	2,900
South Braman	1,550	1,500
Blackwell	3,400	3,400
Hubbard	2,800	2,800
Thomas	1,300	1,200
Tonkawa	12,700	12,600
Garber	8,200	8,100
Burbank	28,050	28,550
Osage, outside Burbank	27,050	27,050
Cushing	19,850	19,850
Yale Jennings	7,400	7,400
Davenport	1,850	1,800
Bristow-Slick	20,800	20,900
North Okmulgee	14,650	14,650
Pearson	3,300	3,400
Lyons-Deaner	5,750	5,750
St. Louis	91,300	83,350
Allen Dome	20,150	20,250
Cromwell	9,150	9,200
Papoose	4,150	4,150
Wewoka	5,750	5,750
Seminole	48,100	48,400
Bowlegs	52,300	52,300
Searight	12,850	12,450
Little River	101,750	106,100
Earlsboro	93,700	94,050
Duncan district	7,800	7,800
Graham	5,300	5,300
Fox	1,650	1,650
Healdton	14,000	14,000
Hewitt	9,400	9,450
Scholem Alechem	15,000	15,100
Others	52,050	52,650
Total Oklahoma	706,050	703,800
Increase		2,250

KANSAS

	Sept. 8	Sept. 1
Greenwood County	26,750	27,100
Florence-Covert	1,000	1,000
Peabody-Elbing	3,150	3,200
Eldorado-Towanda	12,700	12,750
Augusta-Fox-Bush	3,300	3,350
Rainbow Bend	1,600	1,600
Russell	3,900	3,800
Churchill	9,050	9,050
Oxford	9,900	9,700
Others	29,100	29,300
Total, Kansas	100,450	100,850
Decrease		400

NORTH LOUISIANA

Homer	4,300	4,300
Haynesville	5,800	5,900
Caddo, light	9,200	9,400
Caddo, heavy	3,100	2,950
De Soto, Red River	4,000	3,950
Elm Grove	550	550
Bellevue	800	750
Cotton Valley	4,350	4,450
Urania	6,500	6,900
Pleasant Hill	550	550
Total, North Louisiana	39,150	39,700
Decrease		550

ARKANSAS

El Dorado	5,200	5,250
Champagnolle	11,150	13,200
Smackover, light	7,400	7,300
Smackover, heavy	56,350	56,450
Stephens	1,000	1,000
Nevada	1,200	1,250
Lisbon	1,950	1,950
Others	100	100
Total, Arkansas	84,350	86,500
Decrease		2,150

TEXAS (Outside Gulf Coast)

Panhandle District

Hutchinson County	34,500	33,750
Carson County	6,500	6,650
Gray County	22,550	21,600
Wheeler County	750	750
Others	1,100	800
Total, Panhandle District	65,400	63,550
Increase		1,850

North Texas

Burkburnett	9,900	9,950
Electra	13,050	13,150
Iowa Park and K-M-A	3,950	3,900
Wilbarger	33,000	36,350
Archer County	19,850	20,050
Montague-Cooke	10,900	11,050
Others	600	650
Total, North Texas	91,250	95,100
Decrease		3,850

TEXAS (Outside Gulf Coast)

West Central Texas

Stephens County	7,050	7,050
Eastland-Desdemona	6,600	7,000
Brown County	12,050	12,000
Coleman County	3,500	3,500
Callahan County	3,600	3,600
Shackleford County	10,850	10,750
Young County	8,000	8,100
Throckmorton County	950	950
Palo Pinto County	450	450
Jack County	1,650	1,700
Others	650	650
Total, West Central Texas	55,350	55,750
Decrease		400

West Texas

Jones County	3,200	1,950
Mitchell & Scurry Counties	2,650	2,800
Howard County	15,400	10,300
Reagan County	17,000	18,350
Crane and Upton Counties	58,600	60,450
Crockett County	2,850	3,250
Pecos County	74,150	77,450
Winkler County	174,500	185,100
Others	1,450	1,600
Total, West Texas	349,800	361,250
Decrease		11,450

East Central Texas

Mexia	6,600	6,650
Currie	450	450
Richland	550	550
Wortham	1,600	1,600
Jacksonville	4,100	.....
Corsicana-Powell	9,950	10,000
Others	.....	2,350
Nigger Creek	950	950
Total, East Central Texas	24,200	22,550
Increase		1,650

Southwest Texas

Luling	13,600	13,650
Lytton Springs	1,000	1,000
Somerset	700	700
Laredo District	8,550	8,600
Dale	1,250	1,200
Others	400	400
Total, Southwest Texas	25,500	25,550
Decrease		50
Total, Texas—(Outside Gulf Coast)	611,500	623,750
Decrease		12,250

GULF COAST

Coastal Texas

West Columbia	7,450	7,200
Damon Mound	650	500
Big Creek	3,000	*3,200
Boling	1,800	1,950
Blue Ridge	9,300	*9,350
Pierce Junction	10,400	10,450
Humble	1,350	1,350
Goose Creek	6,650	6,650
South Liberty	3,400	3,650
Hull	10,550	10,550
Saratoga	1,000	1,000
Batson	1,400	1,400
Barber's Hill	600	600
Sour Lake	3,250	3,350
Spindletop	37,400	37,900
Orange County	3,500	3,350
Others	5,400	2,800
Total, Coastal Texas	107,100	105,250
Increase		1,850

Coastal Louisiana

	Sept. 8	Sept. 1
Vinton	4,300	4,350
Sulfur Dome	2,600	3,200
Lockport	3,700	3,800
Sweet Lake	3,900	3,800
Evangeline	1,050	1,100
East Hackberry	3,050	3,700
Edgerly	1,000	1,000
Sorrento Dome	1,000	1,200
Others	1,350	1,200
Total, Coastal Louisiana	21,950	23,350
Decrease		1,400
Total Gulf Coast	129,050	128,600
Increase		450

ROCKY MOUNTAIN

Wyoming

	Sept. 8	Sept. 1
Salt Creek	34,850	38,500
Grass Creek	2,450	2,400
Elk Basin	950	950
Big Muddy	2,600	2,600
Lost Soldier	4,100	4,050
Rock Creek	2,650	2,750
Lance Creek	550	500
Others	7,600	5,450
Total, Wyoming	55,750	57,200
Decrease		1,450

Montana

Cat Creek	1,600	1,650
Sunburst	8,000	8,000
Others	150	200
Total, Montana	9,750	9,850
Decrease		100

Colorado

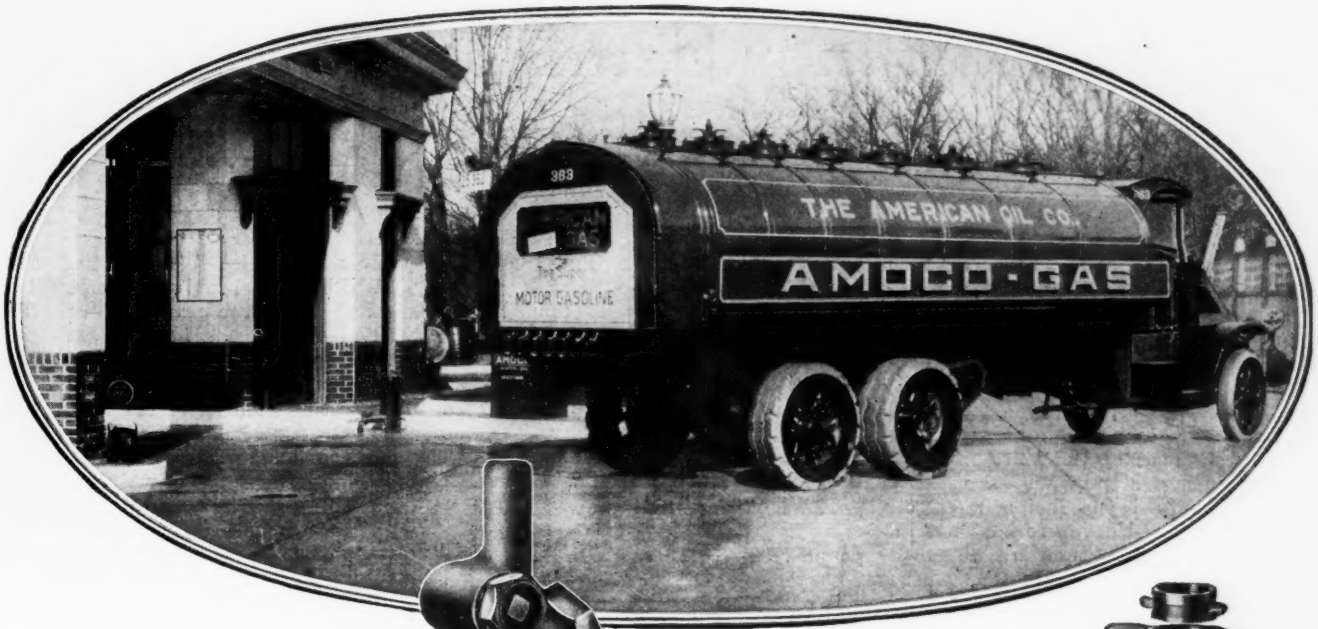
Moffat (Craig)	1,200	1,400
Fort Collins	2,450	2,600
Florence	1,000	1,050
Others	2,400	2,350
Total, Colorado	7,050	7,400
Decrease		350

New Mexico

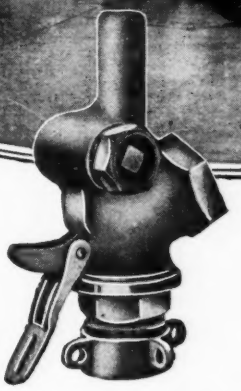
Table Mesa	100	.....
Hogback	500	500
Artesia	1,000	1,000
Rattlesnake	500	1,900
Others	200	200
Total New Mexico	2,300	3,600
Decrease		1,300
Total, Rocky Mountain	74,850	78,050
Decrease		3,200

CALIFORNIA

	Sept. 8	Sept. 1
Santa Fe Springs	38,000	38,000
Long Beach	197,500	194,000
Huntington Beach	53,500	53,500
Torrance	17,500	17,500
Dominguez	11,000	11,000
Rosecrans	5,500	6,000
Inglewood	29,000	29,500
Midway-Sunset	74,000	74,000
Ventura Avenue	52,000	48,000
Seal Beach	28,000	28,000
Others	129,800	129,500
Total California	635,800	629,000
Increase		6,800



Amoco Tank Truck equipped with seven Wheaton Type A Faucets—like the one more clearly shown in the illustration at the left.



The American Oil Company Standardizes on WHEATON

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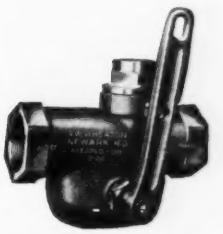

Type 26 Loading Valve

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Misener Sand Well in "Pott" County Opens Another Seminole Area Pool

By John Power
N. P. N. STAFF WRITER

TULSA, Sept. 8

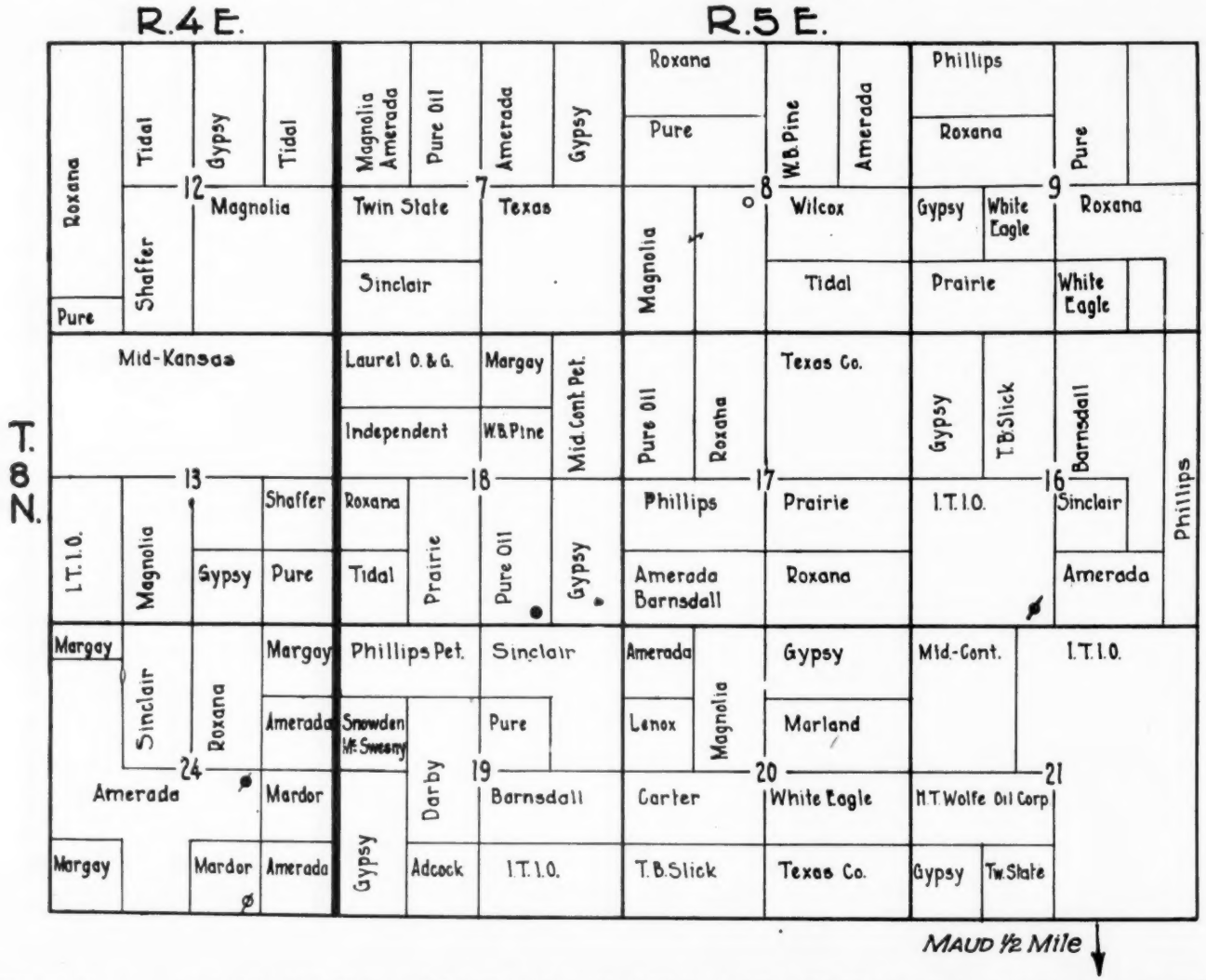
WITH restrictive measures occupying the minds of Oklahoma operators to the partial exclusion of field reports, Pottawatomie county, Seminole county's western neighbor, gently ousted the latter from its position as the most interesting spot in the state from an oil producing standpoint. Not that "Pott" county is producing more oil than Seminole—Heaven forbid—but its possibilities are more of an unknown quantity than are Seminole's, where the present producing areas or partially proven areas are more or less defined and under control.

The newest discovery in Pottawatomie county is the Pure Oil Co. No. 1 Lindley, in the SE SW SE of 18-8N-5E. This well topped the Misener sand at 4098 feet. After being drilled to a total depth of 4117, still in the sand, the first day's production from the well amounted to 780 barrels, most of which was produced in the first 10 hours, when the well was pinched in.

The next day's output was 410 barrels against a back-pressure of 225 pounds. A subsequent 18-hour open flow test gaged 2532 barrels, at the end of which the well was pinched in with no sign of a decrease in the rate of flow. The well is about seven miles southwest of the Mission pool, a potential Wilcox sand area in which several wells are completely pinched in at the present time. The well is one of several that are being drilled on acreage on which the lease expiration date is close at hand.

Offsetting leaseholders have contributed dry hole money contracts with the understanding that discovery rights are to be waived in the event of production. In accordance with the agreements under which this and similar wells were drilled or are drilling, the well will be pinched in to a nominal amount until the first offset is completed.

The St. Louis pool is "Pott" county's largest contribution to the series



The new Misener sand well of the Pure Oil Co. in 18-8-5. The well, good for 3,000 barrels daily, will be shut in accordance with the agreements made with offsetting owners of leases, and will not be produced to capacity until the first offset is completed

Short stroke pumping on deep wells necessitates high speeds to secure production; increasing sucker rod failures, belt troubles, power requirements and depreciation on the entire rig.

Use of the IDECO Long Stroke Crank Counter-balance, which, combining the pull of gravity and kynetic energy (the fly-wheel effect), secures smooth, vibrationless pumping. Power peaks and pauses in the load are eliminated, reducing rod trouble, belt failures, wear on the machinery and keeping the well continuously on the pump.

This device is provided with a series of adjustments and weights to compensate for the weight of rods and fluid. Pumping strokes from 22″ to 72″ are obtained by shifting the wrist-pin. There are no moving parts to wear or bearings to oil. The counterweight is quickly and easily disengaged to permit pulling rods and tubing. Due to the smooth operation, higher speeds can be used and less power is required. The counter-balance can be installed on any standard rig.

Operators report that the IDECO Long Stroke Crank Counterbalance often pays for itself in the first few weeks of operation and permits wells being put back on the pump that hitherto have been a liability. Their use on your wells will mean increased profits and dividends.

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of fields which started with the original Seminole field of Twp. 9-6, and which have kept the Mid-Continent oil industry in the shadow of overproduction for the past two years. Total production from all producing horizons—the Hunton line, the Simpson and the Wilcox—amounted to 85,695 barrels from 122 wells for the 24 hours ending the morning of Sept. 8.

Of this amount 60,084 barrels of it is from the compact Wilcox sand area in the southwest quarter of 19-7-5. This imposing production is from a total of but 13 wells. A comparative table of production of these wells follows:

Company	Well No.	Prod. Sept. 7	Prod. Aug. 31
T. B. Slick, Inc.	Hembree 1	3678	5570
T. B. Slick, Inc.	Hembree 2	4745	6455
T. B. Slick, Inc.	Hembree 3	2205	7875
T. B. Slick, Inc.	Hembree 4	7135 (Five feet deeper)	8466
Independent O&G Co.	Youts 1	10225	11760
Independent O&G Co.	Youts 2	3220	1430
Independent O&G Co.	Youts 3	3115	4260
Independent O&G Co.	Youts 4	4460	4948
Independent O&G Co.	Youts 5	3755	.....
Phillips Pet. Co.	Stahl 2	7575	.....
Gypsy et all	Stahl 1	5765	.....
Gypsy et al	Stahl 2	677	.....
Magnolia Pet. Co.	Hembree 1	3529	1230 (6 hrs)
Total		60,084	51,984

Two more wells are due in at any time. One is the Magnolia Petroleum Co. No. 2 Hembree, which is a direct offset to the No. 1, the discovery well in the Wilcox and has the Wilcox sand at 4135 to 4152.

The well is swabbing 179 barrels daily from the Simpson formation, and as yet has had no oil from the Wilcox. However, the upper part of the Wilcox sand in this area has not been the big pay, so that the story on this well is not yet told.

The Prairie Oil Gas Co. has a well about down to the sand. This test, the No. 1 Wolfe, in the NW of sec. 29-7N-5E, is drilling at 4225 feet as this is written, with 1000 feet of oil in the hole from the Viola, topped at 4158 feet. Should this make a well, it will extend production a location to the southeast.

Notable wells in this pool of the past week are the Gypsy Oil Co.'s No. 1 Stahl and the Phillips Petroleum Co.'s No. 2 Stahl. Gypsy's well, in the NW NE NE of 30-7-5, topped Wilcox at 4321 feet and was drilled to 4355 feet. Its high mark was 6702 barrels. The Phillips well, in the NE NW NE of 30-7-5, had sand at 4118-70 feet and made maximum flow of 7575 barrels. Gypsy's No. 2 Stahl is in process of completion. It is in the NE corner of Sec. 30 and had Wilcox at 4324-32 feet. Its high production was 1037 barrels, swabbing.

Since the production figures quoted above were received, reports from the field say that both the T. B. Slick Nos. 1 and 3 have gone dead and were shot with 30 quarts apiece. After the shot, the No. 1 well came back at the rate of 285 barrels per hour for a short time, and then bridged over.

The No. 2 well bridged immediately after the shot, without giving time for an indication as to the production. Both wells are being cleaned out. Other completions in the St. Louis pool during the week were of the usual run-of-mine Simpson or Hunton lime wells.

The Little River production fell off slightly during the week, amounting to 94,674 barrels from 220 wells, for the 24 hours ending 7 a.m. Sept. 8. For the corresponding time a week ago the production had been 105,205 barrels from 213 wells. This decline is accounted for partially by the pinching in of some late wells, which had been delayed in completion and had been allowed the regular three-day period of open flow before being pinched in to make the lease conform to the 1600 barrels per 40 acres plan. Sept. 10 this restriction is removed, and all wells in the field are to be opened to capacity for two days, the average of which is to determine the potential for the future proration as outlined elsewhere in NATIONAL PETROLEUM NEWS.

At the present time the standing of the first 10 companies in order of production in the Seminole district according to a recent gage is as follows:

Company	Production (Bbls. per day)	Wells
Gypsy	43,849	128
Carter	40,612	136
Prairie	23,866	88
I. T. I. O.	21,219	134
Pure	20,922	60
Barnsdall	18,644	82
Sinclair	18,700	66
Magnolia	17,435	85
Independent, et al	12,270	41
Amerada	8431	38

Help From the Royalty Owners

ABOUT two months ago a group of royalty owners in the Mid-Continent field—many of them with holdings valued at a million dollars or more—met in Tulsa and organized the Mid-Continent Royalty Owners Association.

In the organization meeting it was stated without equivocation by several that they would support a policy of cooperation with the oil operators, whom they believed to be best fitted to determine the proper procedure in developing and producing a lease. They spoke with particular reference to the restricting of drilling and the curtailment of production.

Since that time every move of this association has been constructive. There was some apprehension among operators, when the association was being formed, that efforts might be exerted by royalty owners, as a body, to thwart the desire of operators to limit production. Thus far, nothing has been done to indicate, even faintly, that the royalty association has aught but the best interests of the entire industry at heart.

Point is given to the assurance of the association that it desires to be of whatever service possible to the operators in a resolution adopted a few days ago. A significant paragraph in the resolution is as follows:

". . . . it is further the sense of this organization that extension of short term leases should be obtained by the operators from the owners of the land and the royalty owners interested therein, rather than to test out said leases while the orders of the . . . . corporation commission are in effect. To aid the operators and the corporation commission in the accomplishment of the results obtainable under the last paragraph, this association pledges itself to assist in securing said extension at a reasonable cost to the operator and it is further the sense of this association that the menace of the oil industry is not the oil in sight that can be produced but the continued opening of new pools in the state of Oklahoma. . . ."

Guy Woodward, attorney for the association, in operators' meeting asserted that the association, through its organization, would assist any operator having a short term lease in getting an extension so as to delay drilling. The association, he indicated, would use its most vigorous efforts in this matter.

The short-term lease—one that is soon to expire unless drilled—has led to the opening of pools at times when industry conditions did not warrant the new discovery. The royalty association may prove to be a pertinent help in holding back such discoveries.—L. E. S.

There are 13 locations in the Greater Seminole area, 28 rigs and 161 drilling wells. By fields these are split up in the following manner:

Field	Locations	Rigs	Drilling
Little River	7	15	121
Maud	0	0	1
Bowlegs	4	4	14
Earlsboro	1	9	21
Seminole	0	0	1
Searight	0	0	3
	13	28	161

Two completions in the Earlsboro field were counted as producers. The Skelly Oil Co. No. 1 Shepard, in the SW NW of 6-9-6, topped the Wilcox sand at 4370. After drilling to 4382, and being shot with 15 quarts, initial production was 105 barrels per hour. The same company's No. 1 Mayes, in the SE NE of 1-9-5, was good for 2499 barrels. These wells are in the east extension to the Earlsboro field.

Near Oklahoma City, where prayers for an oil boom have been sent wherever prayers for this doubtful blessing are heard, the Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. report a gas well estimated at better than 40 million feet per day at 4800 feet. The well in the center of the SE SE of 24-11N-3W, is more or less out of control, efforts to mud the gas off and continue drilling in search of oil having been so far unsuccessful. The sand is supposed to be the Layton. The same well previously made about 30 million feet of gas at the 4000-foot level.

Showing in 3 Texas Wildcats; Potential Output Gains

HOUSTON, Sept. 7

THREE wildcat tests in widely separated parts of the west Texas region are being watched closely for their bearing on future development.

Two of the tests are in the Permian salt basin and the third is in Menard county, about 75 miles southwest of lenticular sand production in the district skirting the general Ranger territory on the west.

The Menard test, in sec. 10, block 2, TWNG survey, drilled inside a 16,000-acre block of the Panhandle Refining Co., Wichita Falls, got its first show of oil a week ago at total depth of 3001 feet.

Oil and water stood in the hole after striking pay and there was then some question about the well being commercial. Latest reports show gas bubbling through cavings in the hole and it is now believed the well will be good for at least 50 or 60 barrels daily. The oil tests 37 degrees, A. P. I. gravity, corrected to 60 degrees F.

Five miles south of Winkler county production, in sec. 50, block F, a test of Sid Richardson, C. F. Kelsey and the White Eagle Oil & Refining Co., developed promising shows of extending development.

Preparation is now being made to run 5-inch casing to 2815 feet, where 1,000,000 cubic feet daily of gas blew tools up in the hole. After removal of the tools the hole bridged 200 feet off bottom, but about one bailer of oil an hour was taken out on test runs.

Failure to make a commercial well at the present level will result in drilling to a probable deeper pay in the lime horizon. At present total depth the test is about 86 feet below sea level and roundly 120 feet in the lime.

Deep Rock Oil Co. is still cleaning out, 20 feet off bottom, in its Andrews county wildcat, sec. 12, block A-46. It bailed oil and water earlier in the week after standing 13 days. The well had 200 feet of oil and 1000 feet of water in the hole at 4410 feet. The water is coming from the 3000-foot level and the oil from a pay topped at 4405 feet.

Prorating figures based on hourly gases now give the Yates and Winkler areas potential production totaling 5,720,594 barrels daily. Yates field totals are 3,425,923 barrels and for Winkler county the figures show 2,294,671 barrels. Potential production in the Howard-Glasscock area and actual yields of west Texas fields where prorating was not found necessary will bring the total potential of the region close to 6,000,000 barrels daily.

Figuring exploitable potential at only 20 per cent of the test figures shown by hourly gages,[1] the Permian salt basin region is capable of fully 1,250,000 barrels daily.

As pointed out in the article referred to in the footnote, a 20 per cent figure for estimating exploitable production may be found ultra-conservative. Higher figures shown by tests are intended only for use in prorating yardsticks and may not be properly used for measuring exploitable quantities of oil without some basis of discounting them.

Water encroachments on production in Winkler have given no additional trouble in recent weeks. The number of wells making water with the oil now totals about 140 as compared with about 90 wells three months ago.

In Yates field, Pecos county, a total of 32 wells have shown water. All but one, however, have been patently edge wells. The other is also considered to be in a "saddle" between different parts of the field.

The "saddle" well is the No. 6 M. A. Smith of the Roxana Petroleum Corp., in sec. 27, block 194, which tested 4 per cent water and 8 per cent b.s., Aug. 27. Later, on proration test, the well flowed 111.29 barrels in one hour, or at the rate of 2669 barrels daily.

Pending the completion of pipelines to permit 25,000 barrels daily production from wells in the Roberts-Settles area of Howard-Glasscock counties, runs are being made by companies with existing facilities on the basis of 50 per cent of the 24-hour test showings of individual wells.

[1]—National Petroleum News, page 20, Aug. 15, 1928.

Seminole District Production by Companies and Leases, September 5 and August 29, 1928

LITTLE RIVER

Company	Farm	S.T.R.	Sept. 5th Wells	Sept. 5th Prod.	Aug. 29th Wells	Aug. 29th Prod.
Amerada	Nitey	2- 7-6	3	1,345	3	1,355
Amerada-Wilcox	Fore	35- 8-6	2	335	2	335
Total Amerada			5	1,680	5	1,690
Barnsdall	Cotcha	23- 7-6	1	1,477	0	0
Barnsdall	Hotulke	22- 7-6	2	1,295	2	1,623
Total Barnsdall			3	2,772	2	1,683
Blackwell	Baker	11- 7-6	3	2,025	3	1,780
Blackwell	Nitey	35- 8-6	6	1,547	6	1,568
Blackwell	Talley	14- 7-6	2	875	0	0
Total Blackwell			11	4,447	9	4,971
Carter	Cotcha-M	23- 7-6	1	247	1	370
Carter	Cudjo	23- 7-6	1	200	1	311
Carter	Fish	36- 8-6	6	775	6	785
Carter	Harjo C	11- 7-6	1	1,600	1	1,600
Carter	Harjo M	13- 7-6	2	1,600	2	2,127
Carter	Jackson	11- 7-6	3	1,600	3	1,600
Carter	Larney	24- 7-6	1	1,175	1	1,600
Carter	Lena	10- 7-6	1	1,600	1	1,600
Carter	Moore	11- 7-6	1	1,600	1	1,600
Carter	Tewee	14- 7-6	3	2,400	2	2,400
Carter	Thomas	11- 7-6	1	900	0	0
Carter	Wilson	12- 7-6	1	1,600	1	1,602
Total Carter			20	15,297	18	15,595
Champlin	Tewee	14- 7-6	1	1,445	1	800
Continental	Cosar L	36- 8-6	7	1,605	1	1,425
Continental	Cosar M	25- 8-6	1	425	1	395
Continental et al.	Milsey	11- 7-6	1	885	1	1,550
Total Continental			9	4,360	9	3,370
Empire	Coker	13- 7-6	1	712	0	0
Gypsy	Brown	33- 8-6	1	2,245	1	2,145
Gypsy	Campbell	33- 7-6	2	159	2	197
Gypsy	Conard	22- 7-6	1	837	1	1,392
Gypsy	Cosar M	25- 8-6	2	10	2	17

(Continued on Page 38)

Seminole District Production by Companies and Leases, September 5 and August 29, 1928

(Continued from Page 37)

Company	Farm	S.T.R.	Sept. 5th Wells	Sept. 5th Prod.	Aug. 29th Wells	Aug. 29th Prod.
Gypsy	Cosar W	36- 8-6	2	453	2	647
Gypsy	Cotcha	23- 7-6	2	1,077	2	1,592
Gypsy	Denmark	11- 7-6	2	3,005	2	1,600
Gypsy	Hulhoke	14- 7-6	6	3,712	5	4,190
Gypsy	Mungee	1- 7-6	1	25	1	25
Gypsy	Pottie	35- 8-6	4	862	4	701
Gypsy	Renton	11- 7-6	3	1,492	3	1,122
Total Gypsy			26	13,877	25	13,631
Independent	Davis R	13- 7-6	2	1,400	2	920
Indep.	Tewee	14- 7-6	2	1,430	2	1,605
Indep.	Harris	23- 7-6	3	1,660	2	1,741
Indep.-W. Eagle	Davis	3- 7-6	3	1,435	3	1,130
Indep.	Williams	15- 7-6	1	715	1	1,575
Total Independent			11	6,640		6,971
I. T. I. O.	Campbell	1- 7-6	1	226	1	242
I. T. I. O.	Dungan	35- 8-6	3	1,194	3	1,022
I. T. I. O.	House-MA	1- 7-6	1	21	1	31
I. T. I. O.	House-WE	1- 7-6	1	43	1	65
I. T. I. O.	House-B	2- 7-6	4	1,200	4	1,313
I. T. I. O.	Hull	26- 8-6	3	1,468	3	1,264
I. T. I. O.	Jackson	1- 7-6	3	985	3	1,038
I. T. I. O.	McCulla	1- 7-6	3	657	3	656
I. T. I. O.	Nitey	1- 7-6	6	463	6	484
I. T. I. O.	Phoebe-A	36- 8-6	3	339	3	372
I. T. I. O.	Phoebe-B	36- 8-6	4	204	4	194
I. T. I. O.	Reed	1- 7-5	1	41	1	31
I. T. I. O.	Soketheche	1- 7-6	3	667	3	661
Total I. T. I. O.			36	7,508	36	7,373
Magnolia	Cruse	2- 7-6	4	1,284	4	1,123
Magnolia	Denby	11- 7-6	2	1,704	1	1,992
Magnolia	Dixon	31- 8-7	1	3	1	3
Magnolia	Harjo-A	14- 7-6	2	1,335	2	1,660
Magnolia	Pottie	35- 8-6	3	675	3	650
Magnolia	Reed	22- 7-6	2	1,680	1	1,854
Total Magnolia			14	6,681	13	7,282
Mid-Cont.	Brunner	11- 7-6	3	1,610	3	2,300
Mid-Cont.	Eleck	23- 7-6	1	455	1	1,300
Mid-Cont.	Smith	5- 7-7	1	65	1	65
Mid-Cont.	Wadsworth	36- 8-6	7	445	7	460
Total Mid-Continent			12	2,575	12	4,325
W. B. Pine	Hoyecha	26- 8-6	2	1,462	2	867
Pine-Phillips	Pottie	35- 8-6	2	550	2	587
Total Pine			4	2,012	4	1,454
Prairie	Chilcoat	25- 8-6	3	1,060	3	940
Prairie	Dungan	35- 8-6	1	30	1	40
Prairie	Gibson	14- 7-6	3	1,965	3	3,620
Prairie	Harris	14- 7-6	2	1,760	2	1,875
Prairie	House	2- 7-6	4	775	4	800
Prairie	Talley	14- 7-6	2	2,405	2	1,170
Prairie-Amer.	Sunny	14- 7-6	4	3,200	4	3,205
Total Prairie			19	11,195	19	11,650
Pure	Cotcha	14- 7-6	5	4,072	5	4,275
Pure	Harjo	11- 7-6	2	1,675	2	1,689
Total Pure			7	5,777	7	5,964
Reiter-Foster	Bunyard	14- 7-6	3	3,065	3	4,685
Roxana	Caesar	11- 7-6	1	153	1	153
Roxana	Hotulke	23- 7-6	2	1,851	1	2,500
Roxana	Johnson	13- 7-6	2	1,828	2	656
Total Roxana			5	3,832	4	3,309
Shaffer	Narcome	36- 8-6	2	300	2	280
Sinclair	Cosar	36- 8-6	3	1,695	3	1,815
Sinclair	Haney	12- 7-6	1	98	1	190
Sinclair	Tewee	14- 7-6	1	800	1	800
Total Sinclair			5	2,593	5	2,805
Skelly	Carl	14- 7-6	1	917	1	1,322
Slick	Williams	15- 7-6	2	885	1	380
Snowden et al	Tiger	13- 7-6	2	2,500	2	3,220
Superior	Soketheche	1- 7-6	1	10	1	10
Texas	Coker	1- 7-6	3	860	3	905
Texas	Janey	11- 7-6	2	1,320	2	1,185
Tex-Indep	Hotulke	23- 7-6	2	1,310	2	1,510
Total Texas			7	3,490	7	3,600
Tidal	House	1- 7-6	3	550	3	540
Tidal	Johnson	1- 7-6	1	30	1	25
Total Tidal			4	580	4	565
Twin State	Lowe	25- 8-6	1	165	1	165
TOTAL LITTLE RIVER			215	103,625	207	101,856

EARLSBORO

Amerada	Anderson	15- 9-5	2	728	2	713
Amerada	Cowden	4- 9-5	7	1,456	7	1,401
Amerada	Rogers	3- 9-5	2	264	2	332
Total Amerada			11	2,448	11	2,446
Atlantic	Foreman	18- 9-5	1	144	1	150
Barnsdall	Brown	10- 9-5	4	1,902	4	2,078
Barnsdall	F. Bruner	2- 9-5	3	704	3	698
Barnsdall	N. Bruner	10- 9-5	3	1,299	3	1,228
Barnsdall	Cudjo	14- 9-5	1	25	1	24
Barnsdall	D. Davis	11- 9-5	3	252	3	284
Barnsdall	J. Davis	11- 9-5	4	1,350	4	1,172
Barnsdall	M. Davis	11- 9-5	3	64	3	59
Barnsdall	Gibson	9- 9-5	8	2,159	8	2,251
Barnsdall	Hern	15- 9-5	1	2	1	2
Barnsdall	Ingram	1- 9-5	8	1,030	8	1,250
Barnsdall	Pack	10- 9-5	4	153	4	183
Barnsdall	Peter	10- 9-5	4	100	4	37
Barnsdall	Sango	1- 9-5	4	3,006	4	3,240
Barnsdall	Sebolka	15- 9-5	1	308	1	361
Barnsdall	H. Sullivan	11- 9-5	1	11	1	0
Barnsdall	Sull-Harjo	10- 9-5	2	38	2	38
Barnsdall	Watsutke	12- 9-5	4	1,109	4	1,179
Total Barnsdall			58	13,512	58	14,234
Burk-Greis	Wisner	6- 9-6	1	2,130	1	2,300
Carter	Davis	13- 9-5	2	200	2	200
Carter	James	6- 9-6	3	6,938	2	7,316
Carter	Sango	1- 9-5	4	45	4	60
Total Carter			9	7,183	8	7,500
Continental	Kays	2- 9-5	2	32	2	35
Continental	Spencer	12- 9-5	4	1,210	4	990
Total Continental			6	1,242	6	1,025
Empire	Barker	12- 9-5	1	128	1	65
Empire	Edmundson	3- 9-5	3	65	3	158
Total Empire			4	193	4	243
Gypsy	Bruner	10- 9-5	4	3,160	4	3,150
Gypsy	B. Carter	11- 9-5	9	3,680	9	3,540
Gypsy	Earl	16- 9-5	1	9	1	18
Gypsy	Hunick	5- 9-5	1	2,115	1	2,132
Gypsy	Noble	12- 9-5	4	1,477	4	1,322
Gypsy	Peter	10- 9-5	3	315	3	312
Gypsy	Sango	1- 9-5	11	10,790	10	12,140
Gypsy	State	16- 9-5	4	1,282	4	785
Total Gypsy			37	22,828	36	23,399
Independent	Bruner	10- 9-5	4	240	3	390
Independent	Sullivan	10- 9-5	2	25	2	22
Independent	Knapp	8- 9-5	3	1,802	3	1,879
Indep.-Margay	Gaines	11- 9-5	4	655	4	675
Total Independent			13	2,722	12	2,966
Magnolia	Bryant	9- 9-5	6	540	6	536
Magnolia	Cowden	4- 9-5	4	40	4	40
Magnolia	Dixon	12- 9-5	1	28	1	28
Magnolia	Edmundson	3- 9-5	3	20	3	20
Magnolia	Holmsley	11- 9-5	7	1,234	7	1,268
Magnolia	Hyde	13- 9-5	1	1,535	1	1,584
Magnolia	Ingram	10- 9-5	1	28	1	30
Magnolia	Lena	10- 9-5	3	60	3	60
Magnolia	Seay	12- 9-5	9	3,071	9	2,810
Magnolia	Simpson	10- 9-5	3	362	3	378
Magnolia	Sparks	11- 9-5	7	874	7	839
Magnolia	Sullivan	12- 9-5	3	84	3	80
Total Magnolia			48	7,876	48	7,673
Mid-Continent	McCumber	9- 9-5	7	90	7	90
Mid-Kansas	Anderson	14- 9-5	3	80	3	80
Phillips	Dunnaway	14- 9-5	1	25	1	25
Prairie	Baker	24- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	3,015	5	3,025
Prairie	Graham C	3- 9-5	2	15	2	15
Prairie	Graham O	10- 9-5	4	1,390	4	1,120
Prairie	Stidham	11- 9-5	12	2,580	13	2,615
Total Prairie			24	7,050	25	6,825
Roxana	Bayliss	17- 9-5	1	25	1	0
Roxana	Hearn	13- 9-5	1	20	1	0
Roxana	Spencer	12- 9-5	2	1,544	2	1,374
Total Roxana			4	1,589	4	1,374
Shaffer	Clark	1- 9-5	3	465	3	452
Shaffer	Sango	36-10-5	1	1,205	0	0
Total Shaffer			4	1,670	3	452
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	1	45	1	50
Sinclair	Sango	2- 9-5	4	3,500	4	3,345
Total Sinclair			6	3,560	6	3,410
Skelly	Mays	1- 9-5	1	81	1	0
Skelly	Sherry	6- 9-5	2	4,911	2	4,970
Skelly	Spencer	12- 9-5	1	438	1	300
Total Skelly			4	5,430	4	5,339
Superior	Ingram	1- 9-5	2	1,023	2	907
Superior	Walker	2- 9-5	2	3,216	2	3,388
Total Superior			4	4,239	4	4,295
Texas	Anderson	29- 9-5	8	550	8	645
Texas	Brown	10- 9-5	8	287	8	220
Texas	Rogers	5- 9-5	4	2,610	4	2,580
Texas	Wilmott	10- 9-5	7	620	7	562
Total Texas			27	3,467	27	3,907
Tidal	Walker	35-10-5	1	2,170	1	2,140
Tidal	Watkins	9- 9-5	7	2,800	7	2,895
Total Tidal			8	4,970	8	5,035
Twin State	Barker	12- 9-5	2	62	2	62
Twin State	Hern	2- 9-5	4	345	4	360
Total Twin State			6	397	6	422

SUMMARY

TOTAL EARLSBORO	**285**	**93,455**	**285**	**93,208**
TOTAL LITTLE RIVER	**215**	**103,625**	**207**	**106,541**
TOTAL BOWLEGS	**327**	**51,916**	**329**	**52,402**
TOTAL SEMINOLE	**291**	**47,640**	**292**	**48,078**
TOTAL SEARIGHT	**69**	**12,861**	**69**	**12,177**
GRAND TOTAL SEMINOLE AREA	**1,187**	**308,497**	**1,182**	**312,407**
Average per well				**260**

Completions in Oklahoma and Kansas, Week Ended September 8, 1928

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	1	NW SW NE 23-1-3 W	2360-2492	35
Magnolia	2	SWc NE 23-1-3	2285-2471	232
Magnolia	1	SWc 28-1-3	3618-3624	25
Roxana	1	NW SW NW 6-2-3	T.D. 3685	Dry

Creek County

Tidal	1	SWc NE 3-17-10E	T.D. 2606	Dry
Lyons	1	SW SE SW 7-14-10E	T.D. 3421	Dry
Sinclair	12	CSL SW SW 9-18-7E	2561-2570	OWD 3
Roxana	7	SW NE NE 18-19-9E	2861-2883	175
Lynch	1	C NE NW 4-18-12E	1706-1722	2.5M
Peters	1	SEc SW 36-16-10E	2717-2731	20
Barnsdall	1	NEc NW 1-15-10E	2660-2679	1170

Garvin County

Magnolia	2	SW SE NW 31-1-3W	T.D. 4515	Dry

Grady County

Malernee	1	SE NW SW 8-3-7W	T.D. 3502	Dry

Hughes County

Itle et al	1	CNL NW NW 27-9-10E	2610-2620	1.5M
Jarvis-Holm	1	NW SE NW 21-7-8	985-999	8.5M

Jefferson County

Gypsy	3	SWc SE SW 17-7-5W	754-784	31&8M
Lesh-McCall	6	NEc SE SW 17-7-5W	784-804	25
Lesh-McCall	7	SEc NE SW SE 17-7-5	776-807	35

Kay County

Carter	1	NE NW SW 30-25-1W	T.D. 4645	Dry
Dewey et al	1	NEc NW SE 32-28-1W	T.D. 3622	Dry
Carter et al	2	C S½ NE 18-29-1E	T.D. 3615	Dry

Marshall County

Smith	4	SEc NW 24-5-5 E	T.D. 1045	Dry

Muskogee County

Metzger et al	2	CNL SW SE SE 6-14-19E	815-823	10
Babcock	1	SE SW NW 8-15-15 E	16-7-1608	125
Robinson	1	C SW NE 8-13-16 E	2002-2020	80

Noble County

White et al	1	SW NE NW 10-24-1 W	T.D. 900	Dry

Okfuskee County

Johnson et al	1	SW NW NW 12-10-11 E	1580-1620	25
Devonian	2	SEc SW NE 11-10-11E	2025-2045	70
Robinson et al	2	NWc SE 35-11-9 E	1485-1476	7
Atlantic	2	SWc NE 35-11-9 E	1450-1465	12
Barnsdall	1	SWc NE 31-12-10 E	T.D. 3296	Dry

Okmulgee County

Mechlin et al	2	SWc NW SE 22-14-14 E	T.D. 2308	OWD Dry
Kavanaugh et al	1	SWc NW NW 1-13-12 E	T.D. 1374	Dry
Wallace	1	SEc SW NW 14-14-14 E	1711-1754	OWD 25
Prairie	1	NWc SE 17-13-11 E	2493-2500	19M

Osage County

Moore et al	9	CNL S½ SW 9-21-9 E	381-392	5
Moore et al	8	SWc NE SW 9-21-9 E	398-411	8
Pettigrove	6	NE NW SE 11-23-11 E	1478-1517	10
Davis-Wright	1	NW NE SW 5-21-9E	T.D. 1597	Dry

Pawnee County

Adamson	1	SEc 24-21-7 E	T.D. 1779	Dry

Pontotoc County

Homaokla	1	NE SW NW 1-4-7E	1985-1998	302

Pottawatomie County

Prairie	1	NW SW NW 30-7-5	4138-4151	3710
Magnolia	1	SWc SE 13-7-4	3828-3950	5
Magnolia	4	SEc 15-7-4 E	3646-3785	65&18M
West-Daube	1	NE SE SW 23-7-4	3845-4080	65
West-Daube	4	SEc NW 24-7-4	4267-4285	1310
Magnolia	1	NW NE NE 34-7-4	3860-3980	100

Seminole County

Prairie	1	SW NE SW 14-7-6	4183-4198	3725
Prairie	2	SE NE SW 14-7-6	4267-4278	4150
Prairie et al	1	SE NE NW 14-7-6	4148-4167	5745
Prairie et al	2	SW NW NW 14-7-6	4347-4358	4470
Prairie et al	3	NWc 14-7-6	4412-4420	3450
Prairie et al	4	NW NE NW 14-7-5	4262-4270	6485
Prairie	1	NW SE SW 14-7-6	4456-4461	3720
Prairie	2	NE SE NW 14-7-6	4220-4430	7140
Prairie	3	SWc 14-7-6	4442-4448	1500
Gypsy	12	SE SW NE 1-9-5	4345-4364	3400
Carter	1	NW SW SW 6-9-6	4351-4362	1748
Skelly et al	3	SE NW SW 6-9-6	4323-4339	3683
Magnolia	2	SW NW SE 9-8-6	4180-4185	670
I. T. I. O.	1	SWc NW 12-8-6	4683-4781	204
Continental	7	SE NE NW 36-8-6	4408-4422	300
Continental	8	NE SW NW 36-8-6	4370-4379	300
Magnolia	3	NE SW SE 19-7-5	4120-4174	9600
Magnolia	1	NEc SW 19-7-5	4215-4325	364
Carter	1	NE SE SW 11-7-6	4030-4045	8560
Mid-Continent	3	SW SE SE 11-7-6	4461-4465	2710
Pure	3	SWc NE 11-7-6	4300-4328	310
Texas	1	SE NE SW 11-7-6	4230-4231	650
Texas	2	NEc SW 11-7-6	4192-4202	1645
Cartsr	1	NWc SW 13-7-6	4548-4552	1710
Independent	2	NW SW SW 13-7-6	4352-4356	507
Carter	2	NE SW NE 14-7-6	4488-4497	1350
Champlin	1	SEc NE 14-7-6	4335-4352	2475
Skelly	1	SW SE NE 14-7-6	4218-4251	1462
Magnolia	2	SEc NE 22-7-6	4150-4161	2552
Carter	1	SWc NE 23-7-6	4280-4285	515
Carter	1	NWc SE 23-7-6	4341-4550	340
Independent	2	NWc 23-7-6	4380-4384	777
Pure	2	SW NE NE 23-7-6	4544-4551	1120
Texas	2	SWc NW 23-7-6	4333-4340	1705
Sunray et al	2	NWc 4-9-6	T.D. 4396	Dry
Magnolia	4	SE NW SE 12-8-6	T.D. 4333	Dry
Gypsy	1	SEc NW 19-7-5	T.D. 4504	Dry
Sinclair	1	NEc SW 15-7-6	T.D. 4976	Dry
Sinclair	3	NE SW SE 15-7-6	T.D. 4111	Dry
Whitney	1	NE NW NE 25-7-6	T.D. 4325	Dry

Stephens County

Franklin	8	NW NE NE 24-1-4	3111-3351	8M
Carter	3	NEc SW SW SE 34-1-8 W	1664-1672	12
Hines	1	NWc SE SE 18-3-6 W	T.D. 2610	Dry
Magnolia	1	SE NE SE 36-1-4 W	T.D. 3504	Dry

Tulsa County

Glidden	4	SEc SW SW 35-19-13 E	T.D. 1450	Dry
Mays-Keyser	1	C NE NE 35-19-11 E	T.D. 2415	Dry

Wagoner County

Taylor et al	1	SEc SW NW 9-15-16 E	T.D. 1400	Dry
Elk Drill	1	NEc SW SW SE 34-17-18 E	T.D. 457	Dry
Turley	1	NEc NW NW SE 12-17-15 E	T.D. 1600	Dry
Creighton	2	SEc NE NW SW 22-18-17	T.D. 290	Dry
Carder	1	NWc NE NE 25-18-15E	T.D. 890	OWD Dry
Cornett	1	C S½ NW 12-18-15 E	T.D. 856	Dry
Stryker	1	SWc NW SW 32-19-16 E	T.D. 680	Dry
Bradley et al	2	CSL N½ NW 31-19-16E	T.D. 670	Dry

KANSAS

Butler County

Garden et al	1	SE NE NW 6-27-6E	2722-2743	250
Mohawk	2	CWL SE NE 6-27-6	2708-2744	600
Dixie	3	SE NW NW 10-27-6	2740-3135	20

Cowley County

Barnsdall	1	NEc 19-31-5E	482-495	1¼M

Chautauqua County

Page et al	1	CWL SW SW 34-32-10	1580-1601	20

Elk County

Blauddell	3	C NE NE 29-31-10 E	1490-1495	15
Denman	1	C SW NE 25-31-10	T.D. 2060	Dry

Greenwood County

Amerada	2	NWc SW 29-22-13 E	1643-1695	250

Marion County

Givens et al	1	SE SW NE 14-7-4 E	2375-2417	15
Sinclair	2	SE NE SE 21-17-4	T.D. 2410	Dry
Phillips	2	SE SW NW 22-17-4	T.D. 2701	Dry
Phillips	3	SW SE NW 22-17-4 E	T.D. 2485	Dry
Phillips	4	NE NW SW 22-17-4	T.D. 2510	Dry

New Locations in North Louisiana, Arkansas and East Texas, Week Ended September 6, 1928

Arkansas

Ouachita county—McDonald Bros., Wilson 1, NE SW sec 25-15-18.
Chicot county—S. D. Hunter, Sawyer No. 1, NW NE 19-18-2.
Union county—H. L. Hunt, Dykes 1, NE NW 21-18-12 (to deepen).
Ohio Oil Co., Kate Townsend 1, NE NE 10-17-14.

Louisiana

Caddo parish—C. C. Gibbins, B. H. Gibbins 1, NE SW 15-21-16.
Richland parish—Community Oil Co., Boise 1 and Boughton 1, NE NW 33-16-6E.
Bienville parish—Baca Drilling Co., State 1, NW NW 16-16-10W.
DeSoto parish—La. Public Utilities Co., Williams 1, NE NW 22-12-12.

East Texas

Cass county—Davis & Pigg, Ed Lambert 1, Wm. Lambert survey, Co-Ord. H-8.
Panola county—Magnolia Pet. Co., L. Fletcher 2, Jordan survey. Co-Ord E-15.

Completions in North Louisiana and Arkansas, Week Ended September 6, 1928

Louisiana—Caddo Parish

Company	Well	Location	Depth	Yield
Dixie Oil Co.	Robertshaw No. 95	13-21-15	1705	25 bbls.
Magnolia Pet. Co.	D. H. Raines No. 26	22-21-15	3975	50 bbls.
Shreveport Oil Corp.	Etchison No. 1	32-21-15	2130	100 bbls.

LaSalle Parish—Urania

H. L. Hunt, Inc.	Urania B-7	7-10-2E	1530	75 bbls.

Morehouse Parish

J. S. Harkness	Bowles No. 4	10-20-5E	2197	5M gas

Union Parish

Nat. Gas & Prod. Co.	Hale No. 1	5-21-4E	2167	6M gas

Richland Parish

Company	Well	Location	Depth	Yield
S. D. Hunter	McCoy B-2	17-16-6E	2436	24M gas

Arkansas—Rainbow City

Lyell et al	Stegall No. 1	11-17-13	3350	dry, abnd.
Ohio Oil Co.	Carroll No. 1	6-17-13	3001	salt water, abnd.
Ohio Oil Co.	R. A. B. Smith No. 2	1-17-14	3112	dry, abnd.
Reliance Drlg. Co.	Kelly No. 1	9-17-14	2808	50M gas

Union County Wildcats

H. L. Hunt	Dopson No. 1	3-19-12	3307	dry, abnd.
J. O. Moore	Pagan No. 1	18-18-11	3305	salt water, abnd.

Chicot County

S. D. Hunter	Lytle No. 1	9-19-3	3128	junked, abnd.

Completions in Texas, Week Ended September 8, 1928

NORTH TEXAS

Archer County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Texas	5-Griffith	Sec. 12 League 3 Sch.	998-1008	50
Texas	4-Griffith	Sec. 12 League 3 Sch.	999-1005	10
Arco	7-Perkins	Sec 14 League 3 Sch.	997-1003	25
Mount-Long	5-Perkins	Sec. 27 Denton Sch.	1765-1766	5
Johnson	9-Wilson	Geraldine	1560-1567	75
American	14-Turbeville	Carson Blk 146	1486-1488	20
Texas	11-Rogers	TEL Sec 1600	1264-1273	15
Grebin	2-Alex.	Meade Sec 22	1415-1421	25
Gilliland	2-Neimeyer	TEL Sec 2415	1388-1398	72
Bridwell	2-Wilson	ATNCL Sec 23 Blk 11	T.D. 1625	Dry
Darr et al	1-Edwards	Breener Blk 27	T.D. 1452	Dry
Turner et al	1-Lyles	SP Sec 2	T.D. 2375	Dry

Wichita County

Magnolia	3-Kemp	KWVFL Sec 27-Blk 1	1210-1213	5
Magnolia	4-Kemp	KWVFL 27 1	1217-1221	118

Wilbarger County

Texas	1-Waggoner	H&TC Sec 3 Blk 17	T.D. 2666	Dry
Golding et al	1-Wag.	H&TC Sec 4 Blk 17	T.D. 2654	Dry

Young County

Stafford	1-Wallace	Tynes	T.D. 600	Dry
Williams	1-Newman	Sallie	T.D. 600	Dry
Wise et al	1-McClure	TEL Sec 1952	T.D. 561	Dry
Beavers	1-Stewart	Dawson	T.D. 902	Dry
Ellis	1-Alex	BS&F Sec 1	T.D. 551	Dry
Hudson et al	1-Bullock	TE&L 343	T.D. 1170	Dry
Jetter et al	2-Garvey	TE&L 1857	T.D. 849	Dry
Mook-Tex	4-Davis	TEL Sec 1487	T.D. 455	Dry
Nix et al	1-Davis	TEL 1487	T.D. 738	Dry
Payne et al	1-Slater	TEL 643	T.D. 604	Dry
Nash et al	5-Hinson	Pier	2163-2174	30
Paull	1-Allen	Lynch	2085-2095	135
Pennell et al	2-Johnson	Sargent	299-518	12
Pennell et al	3-Johnson	Sargent	504-517	20
Shappell	2-Garrett	TEL Sec 1487	540-551	25
Keliner et al	1-Davis	TEL 1487	530-562	10
Keliner et al	19-Lagston	TEL 1490	568-582	4
Pennell et al	1-Johnson	Sargent	511-527	8

NORTH EAST CENTRAL

Brown County

Gutzman et al	6-Stanley	Smith Blk 139	422-435	8
Charter	9-Byler	T&NO Sec 43	1307-1321	200
Midwest	2-George	Cross	1317-1331	107
Young et al	9-Teston	Curlong	1185-1210	150
Anna Belle	9-Hickman	Benson	1234-1253	145
Kone Prod	13-Hickman	Benson	1239-1254	100
Midland	4-Hickman	McGloin	1298-1306	50
Phillips	15-Hickman	Benson	1255-1279	40
Richards et al	2-Conway	Bassett	T.D. 605	Dry
Farlyn	1-Eads	Day	T.D. 1227	Dry
Jay Hawk	9-Boyson	Williams	1600	Dry
Sawyer-Shad	1-Stone	Williams	1405	Dry
McLester et al	14-Wooldridge	Gaines	1260	Dry
Shelton et al	2-Hamilton	English Sec 791	1183	Dry
Golding-Zoch	1-Eddington	Comal Sch.	400	Dry

Callahan County

Thompson et al	1-Seale	T. P. Bond	T.D. 1008	Dry
Tidal	1-Seale	BBB&C Sec 130	T.D. 781	Dry
Gibson et al	1-Ross	BBB&C 94	T.D. 1502	Dry

Coleman County

Humphrey et al	1-Mathews	Raguet Blk 43	1846-1851	8
McCamey	1-Rae	Beall Blk 301	2900-2928	7M
Meeks et al	1-Taylor	Overby	T.D. 2207	Dry
Rex-Tex	1-Banister	Scott Sec 9 Blk 665	T.D. 1918	Dry
Cranfill	1-Henderson	Young Blk 494	T.D. 1400	Dry
Henshaw	1-Hill	SP Sec 1	T.D. 2504	Dry

Comanche County

Amerada	1-Landreath	Lampasas Sch.	T.D. 955	Dry
Carter	1-Strickland	Stephens	2621-2657	3M

Concho County

Douglas	1-Harrel	Moore Sec 27	T.D. 3505	Dry

Eastland County

Ark. Fuel	11-Connellee	Usurrey	1234-1250	7
Butler	1-Green	H&TC Sec 37 Blk 4	T.D. 3920	Dry
Root et al	3-Thorpe	H&TC 37 4	T.D. 3748	Dry
Mook-Tex	4-Casey	Van Norman	T.D. 3195	Dry

Haskell County

Hill	1-Proctor	Rodriguez	T.D. 2027	Dry

Jack County

Walton	2-Maxey	SP	T.D. 605	Dry
Ellis et al	8-Fee	Williams	T.D. 548	Dry

Jones County

Phillips	2-Sharp	TP Sec 14 Blk 9	2522-2533	175
Phillips	5-Tessie	TP 19 19	2500-2527	50
Roberts	2-Grayson	TP 13 19	2523-2536	414
Roberts	3-Grayson	TP 13 19	2531-2549	700
Texas	1-Carter	TP 13 19	2517-2533	157
Hucony	2-Tyner	TP 14 19	2538-2549	487

Palo Pinto County

Britton et al	2-Strawn	Ryan	3052-3065	12
Richardson et al	1-Edgins	Metcalf	1417-1418	12
Gordon et al	1-McDonald	TP 38 1	4283-4285	3M
Bullington et al	1-Webster	Smith	1330-1338	6M
Peters et al	1-Weldon	CEPI&M	T.D. 2187	Dry

Parker County

English et al	1-Peters	Garves	T.D. 930	Dry

Shackleford County

Sterling	1-Whitney	H&TB Sec 8	375-388	6½M
Roeser-Pendleton	62-Cook	ET Sec 60	1186-1198	25
Roeser-Pend	72-Cook	ET 60	1177-1210	75
Roeser-Pend	73-Cook	ET 60	1182-1190	40
Roeser-Pend	5-Cook	ET 61	1348-1376	300
Roeser-Pend	5-Cook	ET 62	1288-1305	250
Roeser-Pend	18-Cook	ET 60	1148-1167	40
Tannehill	10-Moberly	ET 59	997-1007	15
Pet. Prod	2-Matthews	ET 28	1123-1153	15
Pet. Prod	3-Matthews	ET 28	1131-1148	15
Phillips	1-Davis	TP Sec 19 Blk 13	T.D. 1797	Dry
Phillips	1-Davis	TP Sec 20-13	T.D. 1903	Dry
Skelly	3-Matthews	ET Sec 32	T.D. 1247	Dry
Texas	1-Sedivich	ET Sec 1	T.D. 1009	Dry
Hope	1-Powers	ET Sec 34	T.D. 1605	Dry
Kingwood	1-Gorsuch	TP Sec 81-13	T.D. 1795	Dry
Pet. Prod	4-Mathews	ET Sec 28	T.D. 1159	Dry
Sterling	1-Walker	Cooper	T.D. 835	Dry
Sterling	1-Whitney	Leahy	T.D. 754	Dry

Stephens County

Texas	3-Martin	LAL Sec 5	3178-3208	12
Schimmel	1-Toole	SP Sec 458	1836-1845	7
Pender	6-Kell	TP Sec 6 Blk 5	3224-3227	800
Hicock	1-Hamil	LAL Sec 5	4053-4057	131
Hanlon	1-Todd	TP Sec 12-6	1895-1909	5&6M
Pace et al	3-Stokes	TEL Sec 12-16	T.D. 3389	Dry
Mook-Tex	5-Riddle	TP 46-4	3705	Dry
Hanlon et al	1-Burke	TP 8-6	T.D. 3381	Dry
Seaboard	1-Tarrant	HT&B 122-13	3944	Dry

Throckmorton County

Simmons et al	1-Thomas	BBB&C Sec 202	T.D. 1753	Dry
McCurdy et al	2-Reynolds	AB&M Sec 19	T.D. 1400	Dry

PANHANDLE

Gray County

Herrogan	1-Lester	ACH&B Sec 1 Blk 1	2500-2501	1059
Delmar	1-Lipbold	H&GN Sec 55 Blk 2	2835-2897	4M

Hutchinson County

R J W	2-Cockrell	D&SE Sec 3-B-2	2905-3047	5
Phillips	2-Garland	H&TC Sec 77-46	2922-2987	25

Randall County

Peterson et al	1-Ewing	H&GN Sec 46-9	T.D. 2201	Dry

Swisher County

Keagan et al	1-Stallings	HO&B Sec 8-13	T.D. 350	Dry
Adams et al	1-Crawford	Sec 38 Blk W-1	T.D. 540	Dry

Wheeler County

Vaughn et al	1-Woodley	H&GN Sec 21-24	1895-1980	53M

WEST TEXAS

Howard County

Green	2-Clay	W&NW Sec 127-Blk 29	1790-1805	100
Amerada	1-Roberts	N&NW 137-29	2470-2550	623

Pecos County

Gulf	10-Yates	Runnels Sch	1159-1330	65 1 hr.
McMan	4-Smith	GC&SF Sec 104	1170-1305	90 1 hr.
Roxana	9-Tippett	GCSF Sec 102	1445-1622	433 1 hr.
Roxana	8-Tippett	GCSF 102-194	1280-1441	380 1 hr.
Gulf	13-Yates	Runnels Sch	1133-1280	1040 20 min.
Fuhrman	1-Ewing	H&GN Sec 46-9	T.D. 2201	Dry

Reagan County

Big Lake	110-Univ.	Univ. Sec 1 Blk 2	2859-2900	335
Big Lake	125	Univ. 12 1	2913-2924	125
Big Lake	127	Univ. 2 12	2921-2935	90
Big Lake	128	Univ. 25 9	2860-2908	100
Big Lake	133	Univ. 25 9	2919-2927	30
Big Lake	130	Univ. 36 1	3079-3087	5
Big Lake	135	Univ. 1 2	2852-2907	150
Big Lake	138	Univ. 1 2	3006-3043	200
Big Lake	139	Univ. 12 2	2872-2884	240
Big Lake	140	Univ. 12 2	2907-2926	75
Big Lake	141	Univ. 12 2	2876-2909	300
Big Lake	142	Univ. 25 9	2950-2955	60
Big Lake	143	Univ. 36 1	3082-3106	350
Big Lake	144	Univ. 1 2	2907-2911	115
Big Lake	150	Univ. 1 2	2417-1432	200

Sterling County

Manhattan	1-Ellwood	H&TC 14 2	T.D. 3610	Dry

Winkler County

Republic	6-Hendricks	PSL Sec 41 Blk B-5	2950-2615	17
Republic	7-Hendricks	PSL 45 26	2610-2870	2335
Skelly	11-Hendricks	PSL 40 26	2695-2725	900 1 hr.
Southern	3-Hendricks	PSL 44 26	2898-2925	840
Southern	2-Hendricks	PSL 41 26	2800-2854	500 1 hr.
Southern Crude	16-Hendricks	PSL 33 26	2850-2920	2500

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended September 8, 1928

OKLAHOMA

Carter County

Company	Well No. Farm	Location
Magnolia	1-Wallace	NE SW NE 22-1-3 W
Magnolia	5-Lewis	NE NW NE 23-1-3W
Roxana	1-Snow	SW NW SE 23-1-3
Magnolia	1-Cox	SW SE NW 33-1-3

Creek County

Prairie	5-Coachman	NEc NW 20-17-7E
Lebow	14-Tiger	SW NW NW 17-17-7E
Wilson	3-Ashbury	NWc NE 1-15-10E
Dixie	4-Tahkaney	NEc SW SE 7-19-9E
Whitten et al	2-Wrightsman	SEc NW 11-17-10E OWD
Wheeler et al	1-Smith	NEc NW 32-17-11E

Grant County

Champlin	1-Fee	SE NE SE 15-27-3W

Jefferson County

Company	Well No. Farm	Location
Hambro	1-Seay	CEL NE NE 32-6-5W
Lesh-McCall	3-Penniston	SWc NE SE SW 17-7-5W

Kay County

Harold	7-Case	SW NE SW 4-27-1W
Wilson et al	1-Murdock	SEc SW SW 2-27-3E

Muskogee County

Babcock	2-Barnett	CEL SW NE 8-15E
Bryan-Emery	6-Barnett	CWL E½ NE 8-15-15E
Musselem	1-Gossett	CEL SW SE 28-15-18E
Cushing et al	1-Myers	SEc SW SW 23-15-17E
Metzger	1-Garrett	CNL NW NE 33-15-18
Musselem	1-Jackson	C SW SE 10-14-17E
Tillman	1-Callahan	NEc SE SE 2-14-18E

(Continued on Page 41)

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended September 8, 1928

(Continued from Page 40)

Company	Well No. Farm	Location
Okfuskee County		
Tidal	14-Grimmett	CE½ SW SW 5-14-18E
Haney	1-Holt	NWc NE NW 20-14-20
George et al	3-Flowers	SWc NE 5-13-16E
Barber et al	1-Lewis	CSL SE NE 8-13-16E
Ramsey	1-Severs	C NE NE 36-11-9E
Devonian	3-Fier	SEc NE SW NE 1-10-11E
Umbrum	2-Simmer	SEc NW SE NE 11-10-11
Twin State	1-Fier	NEc NW NE 11-10-11
Okmulgee County		
Unger	1-Sells	NWc NE 25-15-14E
McInturff et al	1-Myers	CNL SW NE 8-13-14
Star Dev	4-Scott	NEc NW SE NE 15-13-14E
Pine	1-Henry (OWD)	SEc NE NE 30-12-13E
Dixie	1-Henry	NEc NW 27-12-12E
Osage County		
Midco	4	NW SW SW 25-27-11E
Winona	8	SW NW SW 27-24-10
Osage Gas	392	NWc NE NW 32-24-12
I. T. I. O.	398	NW SE SE 29-23-9E
McGill	1	SWc SE 8-22-8E
Pawnee County		
Turner et al	2 Est	SWc SE SE NE 30-20-9E
Adamson	2	SEc SW SE 24-21-7E
Pottawatomie County (St. Louis Pool)		
Prairie	6-Gammon	NE SW NW 30-7-5
Prairie	7-Gammon	SE SW NW 30-7-5
Prairie	8-Gammon	SW NE NW 30-7-5
Prairie	4-Wolfe	SW NW NW 29-7-5
Prairie	3-Wolfe	NE NW NW 29-7-5
Prairie	4-Ellison	SE NE SW 25-7-4
Amerada	1-Cossland	NEc SW 8-8-5
Gypsy	3-LcClair	SE SW SE 23-7-4
Texas	3-Cherry	NE NW NW 25-7-4
Magnolia	2-Fyke	NW NE NW 29-7-5
Independent	3-Blandin	NW NE SW 30-7-5
Independent	4-Blandin	NE NW SW 30-7-5
Mid-Kansas	3-Lunay	SW NW NW 30-7-5
Mid-Kans	4-Lunay	SE NW NW 30-7-5
Tomlinson et al	1-Whisenhut	NW NE SE 35-7-5E
Seminole County		
Gypsy	13-Sango	NE NW SE 1-9-5
Gypsy	14-Sango	SW NE SE 1-9-5
Carter	5-James	NW NE SW 6-9-6
Skelly	2-Shepherd	SE SW NW 6-9-6
Slick-Skelly	4-Campbell	SW SE NW 6-9-6
Slick-Skelly	5-Campbell	SE NE NW 6-9-6
Gypsy	1-Lena	SEc NE 10-7-6
Continental	3-Milsey	NE SW SW 11-7-6
Texas	5-Janey	SW NE SW 11-7-6
Texas	6-Janey	SE NW SW 11-7-6
Independent	3-Davis	SE SW SW 13-7-6
Carter	2-Cudjo	NE NW SE 23-7-6
Mid-Continent	2-Aleck	SE NE SE 23-7-6
Tidal	1-Harrison	NWc 10-7-7
Stephens County		
Medlin et al	2-Simpson	SWc SE SW SE 34-1-8W
Magnolia	11-Cook OWD	NEc NW SW 30-1-8W
Tulsa County		
S.S. Home	3-Jones	CEL NW NW 15-19-11E
Breen et al	1-Mackey	NWc NE 36-19-13E
Wagoner County		
Brinker et al	1-Lewis	NEc NW NW NE 31-18-18E
Duke et al	1-Brown	NEc SW NW 36-16-17
Hale-Ford	2-Brown OWD	NE SE NW 36-16-17
KANSAS		
Butler County		
Blue Stem	4-Doughty	CNL NW SW 5-27-6E
Empire	2-Butler	NW SE NE 22-27-5
Davis et al	8-Lewis	NW SE SW 3-27-6
Garden et al	3-Sluss	NEc SW NE 6-27-6
Empire	3-Sluss	CEL SE NW 6-27-6
Cowley County		
Sooner	4-Webb	SWc 10-31-10E
McPherson County		
McPherson	2-Anderson	C SW NE 31-18-2W
Prairie	1-Anderson	C NW NE 31-18-2W
Osborne County		
Jarvis et al	1-Jellison	SEc 13-10-15W
Sedgwick County		
Bu-Vi-Bar et al	1-Lyons	SW NW SW 7-26-1E
Bu-Vi-Bar et al	1-Lance	NE SE SE 12-26-1W
Sumner County		
Helmerick-Payne	1-Wartick	SEc NE 8-34-2E
Washington County		
McCool-Vincent	1-Linn	NWc NE 27-4-3E
Woodson County		
Oko	4-Ollinger	SE NW NW 14-23-13E
Fields-Cross	1-Eddes	NE NW SE 24-25-13E

TEXAS FIRST REPORTS

NORTH TEXAS

Company	Well No. Farm	Location			Survey
Archer County					
Stumpf et al	3-Wallace	League 3	Blk 11		Denton Sch.
Moran	1-Perkins	Blk 10			New Colony
Humble	1-Logan	Blk 23			Taylor
McLaughlin et al	1-Turberville	Blk 17			Jefferson Sch.
American	1-Ward				Tomlinson
Wichita County					
Tenbrink	1-Wigley		Tapp		
United Prod	1-Waggoner	Blk 36	George		
Bridwell	1-Burnett	Sec 3	H&TB		
Moore	1-Burnett	Sec 9	H&TB		
Wilbarger County					
Baker et al	2-Waggoner		Baker		
Texas	16-Wag	Sec 24	Blk 4	H&TC	
Texas	15-Wag	24	4	H&TC	
Texas	14-Wag	24	4	H&TC	
Texas	13-Wag	24	4	H&TC	
Waggoner	4-Wag	33	4	H&TC	
Waggoner	3-Wag	33	4	H&TC	
Young County					
Gulf	1-Campbell	Sec 1371		TE&L	
Kleiner et al	20-Langston	1490		TE&L	
Kleiner et al	21-Langston	1490		TE&L	
Parker	1-Baker	1937		TE&L	
Tidal	1-Garrett	1487		TE&L	
Riggs	12-McKinley	1489		TE&L	
Mook-Tex	5-Davis	1487		TE&L	
Kleiner et al	2-Davis	Sec 1487		TE&L	
Pennell et al	3-Johnson			Sargent	
Pennell et al	4-Johnson			Sargent	

NORTHEAST CENTRAL

Company	Well No. Farm	Location			Survey
Brown County					
Van Eman et al	1-Davis	Sec 43	Blk 276		Kerr Sch.
Riordan et al	1-Riordan	343			Jennings
Lamb	1-Gwathney				Harris
Royalty	1-Joplin	599			Gragg
Wittmer	1-Innis	57			Brown
Moore	3-Williams	157			ET
Holderman et al	1-McClanahan	791			English
Bearman et al	1-Clark	Sec 3	Blk 798		McGloin
Humble	24-Hickman		783		Benson
Callahan County					
Tidal	2-Gilliland	Sec 147			BBB&C
Garner	1-Settle	74			Comal Sch.
Coleman County					
Wilmott et al	1-Guthrie	Blk 80			Lipscomb
Cunningham et al	2-Jennings	94			Lipscomb
Manhattan et al	1-Dodgen	Sec 119	Blk 272		Byman
Lyles et al	1-Manning	2	1		H&TB
Cooke County					
Magnolia	1-Johnson				Clark OWD
Ruwalt et al	2-Danglemeyer	Blk	20		Ivy
Elco	1-Fields				Allen
Pacific	1-Franklin				Barry
Gist-Grady	1-Harris				Harris OWD
Gist-Grady	2-Harris				Harris
Eastland County					
Russell et al	1-Duncan				Bledsoe
Lewis et al	1-Lyerla	Sec 27	Blk 2		H&TC
States	1-Edmondston	22	2		H&TC
Arnold et al	1-Rust	44	4		H&TC
Schimmell	1-Hazzard				Van Norman
Goodwin	1-Hazzard	31			McLennan Sch.
Jack County					
Walton	1-Moore	Blk 2			SP
Ellis et al	9-Fee	Sec 4			Williams
Montague County					
Kilcrease et al	1-Black	Blk 23			Wells
Palo Pinto County					
Berry et al	1-McDonald	Sec 35	Blk 2		TP
Runnels County					
Vacuum	3-McMillan	22		532	Diaz
Shackleford County					
Roeser-Pend	78-Cook	Sec 60			ET
Roser-Pend	7-Cook	61			ET
Miller et al	1-Robinson	42			BAL
Proffitt et al	1-Titus				Williams
Stephens County					
Tidal	1-Jones	Sec 125			H&TB
Hanlon et al	2-Todd	Sec 12	Blk 6		TP
Tex-Pac	11-Graham	Sec 81	Blk 4		TP

PANHANDLE

Company	Well No. Farm	Location			Survey
Gray County					
Texas	1-Bull	Sec 2	Blk B-2		H&GN
Magnolia	2-Harrah	150	3		I&GN
Brewer et al	1-McLarty	2	1		ACH&B
Whalen et al	1-Williams	Sec 7	Blk 1		ACH&B
Prairie	2-Harrah	163	3		I&GN
Roxana	1-Lester	1	1		ACH&B
Texas	5-Saunders	3			H&GN
Texas	3-Thut	1			H&GN
Texas	3-McLarty	1	1		ACH&B
Texas	4-Chapman	51	25		H&GN
Travis et al	1-Morse	58	25		H&GN
Hutchinson County					
Phillips	2-Florence	Sec 2			Whitley
Moore County					
Barnsdall	1-Hagy	NWc			Ross
Wheeler County					
Martin et al	1-Gossett	Sec 101	Blk 23		H&GN
Lone Star	1-Shleton	22	24		H&GN
Lone Star	1-Ackley	20	24		H&GN
Lone Star	1-Hicks	52	17		H&GN

WEST TEXAS

Company	Well No. Farm	Location			Survey
Crane County					
Gulf	44-McElroy	Sec 200	Blk F		GCSD&R
Glasscock County					
Cosden et al	1-Roberts	157	29		W&NW
Howard County					
FHE	5-Roberts	137	29		W&NW
Marland	2-Clay	138	29		W&NW
Mitchell County					
Owen-Sloan	1-Brown	93	26		TP
Pecos County					
McMan	2-Smith	25		194	TC
Cal Co	3-Smith	Sec 26	Blk 194		GCSF
Red Bank	4-Smith	24		194	GCSF
Fletcher et al	1-Winfield	11		132	T&STL
Ward County					
Talbot et al	1-Dorr	Sec 9	Blk B-5		H&TC
Winkler County					
So. Crude	4-Hendricks	Sec 34	Blk 26		PSL
So. Crude	2-Hendricks	34	26		PSL
Marland	2-Hendricks	34	26		PSL
So. Crude	H 1-Hendricks	46	26		PSL
So. Crude	E 1-Hendricks	40	B-5		PSL
So. Crude	D 1-Hendricks	35	B-5		PSL
So. Crude	R 1-Hendricks	27	26		PSL
So. Crude	13-Hendricks	33	26		PSL
So. Crude	B 2-Hendricks	46	26		PSL
Marland	1-Hendricks	30	B-5		PSL

Analysis of Pumping Problems Facing Winkler Field Operator

By E. H. Schroeder*

Presented Before Texas-Louisiana-Arkansas District, American Petroleum Institute Division of Development and Production Engineering, Galveston, Texas, Sept. 5-6.

THE need of a broader knowledge of southeast New Mexico and Winkler county, Texas, field conditions with a view of ultimate standardization of lifting methods by a majority of the operators has presented itself. This was determined by the writer upon questioning several of the production superintendents only to learn of much adverse criticism of the other fellow's choice of equipment for pumping wells.

From what is known of the producing fields in the Permian basin, it is quite impossible to draw a comparison, as the same development measures cannot be applied to each. Reagan county submitted to a shortage of natural gas fuel, Crane county adjusted its operating methods to operating with gas highly impregnated with sulfur and to gyp water troubles, while Winkler county presents entirely different conditions, the determination of which is the object of this paper.

It is conceded as impractical to assume methods used in one area can be applied to another, but it is my belief that, with results of Winkler observations set in comparison with Reagan and Crane county fields, we will have a fund of information on which development and operating problems of new fields discovered in the Permian basin may be based.

The advent of proration of production May 5, this year, not only saved producers on pipe line and storage facilities, but many thousands of dollars will be realized because hasty decision as to type of equipment and general operating policies is unnecessary and time is provided for careful analysis of all phases of the subject, before heavy investments are made.

Therefore, it is the purpose of this paper: First, to present the problem; Second, to emphasize its importance and outline plans for its study; Third, to gain the cooperation of all concerned in a combined effort of solution.

In a circular letter addressed to all major operators in the Winkler district, it was asked whether gas engine or electric power would be adopted for pumping wells. The result of these written, and other verbal inquiries, is as follows:

Five companies will adopt gas engine power.

Five companies will adopt electricity.

Four companies were non-committal. However, of these four, two companies favor gas engines and two favor electricity.

The summary status of these inquiries, therefore, is, seven companies are in favor of gas engines and seven companies electrically inclined, which is an equal division of opinion. To agree or to disagree with either faction would be in error, as they cannot be, and are not wholly wrong. The maximum risk in the single choice of one type of power is ever present. The extent of this risk can only be apportioned to the company's good judgment of present, and foresight of future, field conditions and to operating policies chosen.

The conditions to be observed are given in the order of their importance as I see them:

(a)—The quality of gas and its effect on equipment when used as fuel.

(b)—Life of adequate supply of natural gas within 25 miles of the field.

(c)—Price of gas if piped approximately 25 miles.

(d)—Quantity of fresh water available.

(e)—Effects, considering possible polution of fresh water strata.

(f)—Prevailing price of electricity versus cost to generate power on leases.

(g)—Possible effects if proration ruling is lifted.

(h)—Extent of water encroachment on oil bearing sands.

(i)—Possibilities of production in lower horizons.

All of which are contingencies to adoption of develop-

Cooperative Solution Urged

THE less than a year old Division of Development and Production Engineering of the American Petroleum Institute is already taking its part in attacking the practical oil field problems common to operators in a field.

Confronted with the problem of ultimately pumping several hundred wells in the Winkler county field in West Texas, and of selecting for that purpose the most efficient methods and types of equipment, the Texas-Louisiana-Arkansas district of the new division has before it a proposal for a cooperative investigation of the 50 wells now pumping in the field.

The author of the accompanying paper, who makes this proposal, suggests the work be handled by a small committee of engineers of the principal operating companies in the field and the results placed before the operating companies for their use in later equipping wells to pump.

The accompanying paper presents some of the general conditions in the Winkler field that concern the problem of well pumping.

*Chief Engineer, Southern Crude Oil Purchasing Co., Shreveport, La.

ment and operating policies as follows:

(a)—Method of completing wells.
(b)—Sizes of casing and tubing installed.
(c)—Required horse-power rating.
(d)—Use of portable well pulling equipment.
(e)—Type of prime mover adopted.

The foregoing conditions and policies may be taken as the subject matter of the problem investigated, all of which resolves itself down to the type of prime mover chosen. These will be briefly discussed in

Importance of the Problem and Plans For Its Study:

(a)—The quality of gas and its effect on equipment when used as fuel:

While this subject has been a source of much concern to operators, it has been materially discounted in the Winkler district because corrosion of equipment generally has been found to be less severe than in any other pool in the Permian Basin. An analysis reflects this gas contains only a slight percentage of hydrogen sulfide.

(b)—Life of adequate supply of natural gas within 25 miles of the field:

There is, at this time, little assurance of an ample supply of high pressure natural gas in commercial quantities within the Winkler field proper. However, it is highly probable the gas produced from casing heads will be of sufficient volume for gas engine operation on pumping wells. Developments to the north and west, and within a reasonable distance of the field for the production of gas in commercial quantities, have proved favorable. It is my belief that these reserves will be of such dimensions that a supply of natural gas for operating purposes is assured.

(c)—The price of gas if piped approximately 25 miles:

Should this become necessary, for the purpose of estimation, wholesale and large quantity distribution, for industrial purposes, should command a price not to exceed five cents (5c) per thousand cubic feet. I would term this price as conservative when figuring gas engine operating costs.

(d)—Quantity of fresh water available:

We have an abundance of good fresh water, at depths varying from 100 to 300 feet, which, incidentally, while being a most desirable feature in Winkler, is not characteristic of other pools in the Basin.

(e)—Effects, considering possible pollution of fresh water strata:

In parts of the field some evidence of pollution of the fresh water strata has presented itself through difficulties encountered in steam boiler maintenance. This could be attributed to faulty casing jobs, or gases containing hydrogen-sulfide penetrating through fissures, contaminating the water to such an extent that chemical treatment is necessary. Further evidence of pollution should be carefully watched, as negligence on the part of one operator can result in a critical situation almost overnight, affecting all steam and gas equipment.

(f)—Prevailing price of electricity versus cost to generate power on leases:

When the choice of electricity is considered, this comparison should be made, especially when wells numbering 100 or more within the limits of the field can be pumped on the unit plan. The larger the number of wells, the more essential is the comparison. Looking forward to a ten-year active operating schedule is within reason. However, to assume a privately owned local plant cannot be profitably amortized within this period, and instead, accept gas engines because of the present high power rates, would certainly be an injustice to the operator, when we know so many things can be accomplished by electrification.

(g)—Possible effects if proration ruling is lifted:

The lifting of proration in this district can only result in a wild scramble for production, the expenditure of many thousands of dollars to handle tremendous volumes of water, building of much additional storage, treating plants, and installation of compressor equipment to put wells on air and gas lift which consequently renders all other types of well equipment useless.

(h)—Extent of water encroachment of oil bearing sands:

Water encroachment has been steadily increasing for the past few months, and, if added to, is likely to result in a serious setback to those minds trying to determine upon a reasonably safe margin in horse-power ratings for pumping wells. Fifty per cent of present producing wells are now making water in quantities varying up to 95 per cent.

(i)—Possibilities of production in lower horizons:

There has been no commercial production of oil encountered to date below 3150 feet. Wells have been drilled to depths as great as 3550 feet, but found to only increase in water with further deepening. Anticipation of production from lower horizons has been discussed many times; but it is for you to decide whether present knowledge of these lower horizons will hold true for the entire district, and serve as a factor when choosing well pumping equipment today.

Policies:

(a)—Method of completing wells:

Because of its direct bearing on the type of equipment to be adopted, the method of completing wells should be carefully studied. Some operators contend the added expense in rock bit cones, etc., to complete by the rotary method, is offset, when using standard rig method, by the cost of rig equipment already installed and ready to pump the well. Others contend the time saved by using the rotary method more than covers the cost of regular equipment when considering the time lost by the standard rig method. With a larger percentage of the wells being of the gusher type, the need of investigation along this line is apparent.

(b)—Sizes of casing and tubing installed:

With comparative large volumes of fluid to be lifted, casing of such dimensions to permit use of the larger size tubing should be installed. Both two and a half and three inch tubing is now being used in the field. By reason of the large volumes handled, necessitating long stroke and large tubing, it is my belief three inch tubing will produce the best results and be eventually accepted as standard.

(c)—Required horse-power rating:

To determine upon the horse-power rating of equipment to pump wells, consideration must be given to a safe margin, first, to pump wells only; second, to pump, pull rods and tubing, with excess power to handle possible changes in volume or kind of fluid lifted; third, to deepen the well and operate after deepening. The difference in cost of engines, or motors of 40 horse-power and upward, is very small and for this reason emphasizes the importance of allowing for a safe horse-power margin to provide for the various units of work outlined, because, to replace equipment, after a choice has been made, would be impracticable and expensive.

(d)—Use of portable well pulling equipment:

Wells of 300 feet depth can be economically handled by use of portable rod and tube pulling equipment. This reduces the lease investment proportionate to the number of wells drilled and makes unnecessary installation of equipment of such horse-power rating to carry this temporary heavy load.

(e)—Type of prime mover adopted:

It is conceded electricity is an ideal power with which to work. Its advantages and future possibilities have been discussed many times. A decision however, favoring gas engines, or particularly electric power, without due consideration of the merits of both, and other factors on which a decision is based, can only result in replacing a part, or all of the equipment originally chosen, or being content to operate under expensive unsatisfactory conditions. The Powell-Corsicana field is a glaring example of this fact.

Granted the cost of both kinds of equipment is about the same, and conditions are equally favorable for the use of gas engines and electricity, it is my opinion gas engines have

(*Concluded bottom Page* 49)

Special Well Hookups Designed For Winkler Field

By A. S. Feild*

Presented before Texas-Louisiana-Arkansas District, American Petroleum Institute Division of Development and Production Engineering, Galveston, Texas, Sept. 5-6

THE Permian basin of West Texas contributed one of the largest gusher fields in the world when the Hendrick pool in Winkler county was discovered and developed. This prolific field, with an average initial production of almost 5100 barrels from 270 completed wells, has probably the highest average initial production per well of any field in the United States, with the exception of the great Yates shallow pool in Pecos county.

Like all major fields in the Permian basin, the Hendrick pool is lime production, the present proven structure being an anticline with a northwest-southeast strike. The present producing area is six and one-half miles long by one and one-half miles wide on the main structure.

Production extends over a dip in excess of 500 feet, with a steeply dipping western flank, commonly as much as 70 feet between locations, 660 feet apart. The eastern flank appears to be sloping more gently, but less consistently between regular well locations than the western flank.

The geologic column above the lime is usually found quite similar in the wells, but varies considerably in different parts of the field. The surface sand is between 150 and 500 feet thick, below which is found the Barstow sandstone ranging from 25 to 150 feet thick. It is noteworthy that this horizon is no indication whatever of the structural condition in the lime.

Below the Barstow sandstone are alternating beds of sand and red bed or red shale to a depth between 1100 and 1500 feet. This is followed by the anhydrite and salt section, which carries to a depth between 2200 and 2700 feet. This last named section varies largely in the ratio of salt to anhydrite, the salt being very thin in the north and west and thickening to the east and south. Where the salt is absent, its normal position is occupied by red bed and anhydrite and sometimes sand.

The base of the salt section invariably carries thin streaks of red beds and sand. Immediately below this and overlying the brown lime is a strata of hard blue-white anhydrite about 40 to 70 feet in thickness. The brown lime is the principal structural horizon marker in the field, and upon it all correlations and contours are based. Therefore, it is regarded very

*District superintendent, Roxana Petroleum Corp., Wink, Texas.

(*Continued from Page* 43)

about reached the peak of their development, and further mechanical improvements, or operating economies, are limited. It is practically impossible to operate gas engines without constant attendance and the limitations of improvement, as I see it, is resolved in the design of a smaller portable engine of higher rating only.

On the other hand, electricity has unlimited possibilities, largely attributable to undeveloped automatic control of well pumping equipment; reduction of operating personnel and eventual lower power rates. Producing properties will some day be operated on a plan similar to our railroad block system. Automatic start and stop relays—high and low pressure control—speed regulation, temperature controls all from a central switch house, or observation tower, eliminating 60 to 70 per cent of operating personnel, consequently a large percentage of mechanical trouble resulting in shut down time directly attributable to lack of knowledge and general negligence common to men; and last, a reduction of existing power rates, or a rate adjustment proportionate to percentage of water of fluid lifted so arranged that power companies will divide their net earnings on this, or some other basis, with the producer.

The maximum risk in the choice of gas engines would be through failure of gas supply, rapid deterioration of equipment because of hydrogen-sulfide content of gas, or contamination of the fresh water strata. The maximum risk in the choice of electric motors would be through increase of water to oil ratio, irregular service, and high price of power resulting in excessive cost per barrel of fluid lifted. Any of which may make necessary an entire change of one type of equipment for another.

The extent of this maximum risk, when replacing an entire rig, is estimated between $2500 and $6000 per well, depending upon the kind of equipment taken out and put back. The minimum risk is placed at $600 per well for freight, hauling, labor, foundations, and equipment, if only the power rating is increased and motors are replaced up to $2500 per well, for an average, if gas engines are exchanged for motors and the building of high lines to the well is necessary.

Cooperative Investigation

There are today approximately 452 wells drilling, or completed, in the Winkler area; of this number, 302 are producing. Therefore, our minimum risk is equal to 302 times $600 or $181,200 and our average risk 302 times $2500, or $755,000, of equipment alone, exclusive of production lost, which can never be regained. Fifty wells are now rigged up to pump and in this number Winkler operators have provided many of the different types of equipment, installed and operated under a variety of conditions. Therefore, expensive, large scale experimentation is unnecessary, and the more beneficial, inexpensive, cooperative research by observation, will be within the reach of all.

We should first concur on an outline of what our investigation will cover; second, choose a variety of types throughout the field for observation; third, select a group of six or eight wells under identical operating conditions directly offsetting each other, half of which is powered with electricity and half gas engines, and from these present a comparison of actual data as above first outlined.

As the work involved will become part of the duties of research departments, petroleum and production engineers, it is suggested that a committee of four, representing those companies most interested in the results and who can provide time for careful study, be appointed to solve the problem.

The committee, and others wishing to report to their companies prior to the next Division of Development and Production Engineering meeting, can get together to the best advantage on whatever special work is assigned them.

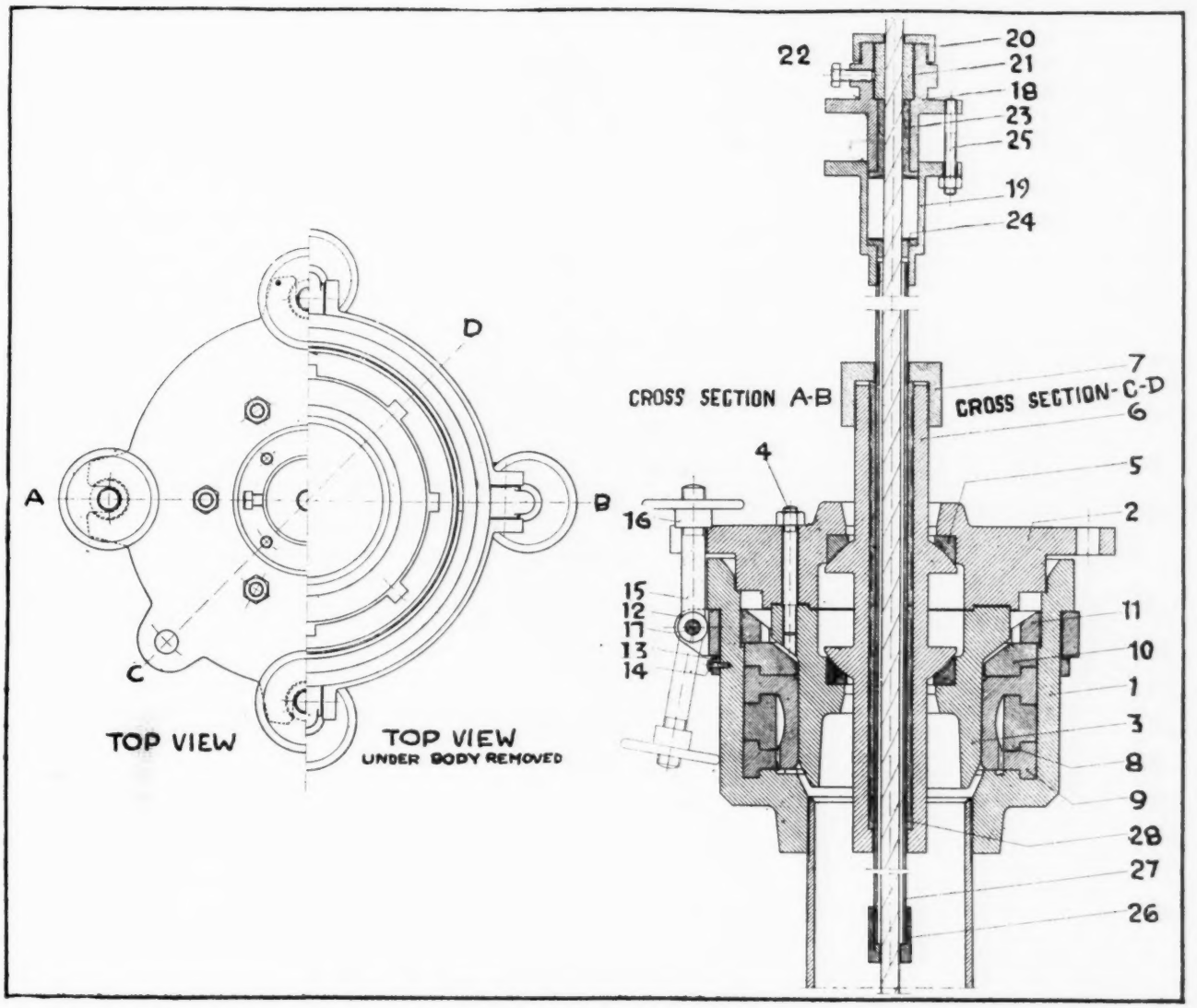


Fig. 1.—Diagram of high pressure oil saver developed by the Roxana Petroleum Corp. for use in the Winkler field of West Texas to overcome difficulties of drilling through high pressure

One is housing; 2, upper bearing; 3, lower bearing; 4, ¾-inch bolts with nuts; 5, seats; 6, swivel; 7, swivel cap; 8, filler piece in 2 halves; 9, packer; 10, follower; 11, screw lock ring; 12, ring; 13, ring; 14, ⅝-inch bolts; 15, 1¼-inch bolts; 16, nuts for No. 15; 17, pins for No. 12; 18, gland; 19, stuffing box; 20, cap for No. 18; 21, slips; 22, ⅝-inch set screws for No. 18; 23, bushing; 24, bushing; 25, ⅝-inch stud bolts; 26, plunger cap; 27, plunger, reth'd Axalson plunger; 28, liners, std Axalson pump liners

important to determine accurately the top of this lime. Between the high and low points of the producing area its depths vary between approximately 2200 and 2700 feet which is regarded as a very desirable casing point.

Production is found in the lime at depths of 220 and 750 feet below the top and for purposes of correlation and convenience the various pays are classified in zones. In general the shallow pays are found low structurally, and their depth in the lime increases toward the crest of the anticline. The most persistent pay zone throughout the field occurs between 415 and 450 feet below the top of the lime. Occasionally, due to a local lack of porosity, this pay is "missed", and drilling is continued in search of a deeper pay zone.

The deeper pay zones are not nearly as persistent and are regarded as lenticular. Many wells are producing from about 500 feet in the lime, one or two from about 600 feet, and one or two around 740 feet in the lime. All of these deeper pays are grouped near the central portion of the field.

All shallow pays, with one notable exception, are grouped along the extreme western flank of the anticline. Here, production is encountered in several pays between 220 and 380 feet in the lime. Many wells on the western flank are producing in three to five separate and distinct pays between the above mentioned depths.

In all cases the oil and gas occurs in porous lime having a honeycombed structure. It follows from this that the amount of oil depends largely on the amount and degree of porosity encountered. Cores from rotary wells show streaks of porosity in the pay zones from a few inches to as much as 15 or 20 feet.

The pores which carry oil and gas have very probably been formed by leaching action of an acidous circulating water. That leaching was subsequent to deformation is shown by coincident pore spaces between the faces of fracture planes.

It is interesting to note there is considerable deposition of asphalt in thin seams and dykes parallel to the bedding and in vertical fractures. This is usually found in the pay zones or in close proximity to them and is readily identified by its vitreous lustre and concoidal fracture.

Water is steadily encroaching throughout the field, and the order of its appearance does not abide by the laws which usually hold true in a sand field. The advancing water apparently has a combination of lateral and vertical movement. The vertical movement is attained through vertical fracturing, which is strongly in evidence in many cores. This often

PRACTICAL methods used by operators in the Winkler county district of West Texas, in setting casing, drilling in wells with both rotary and cable tools and connecting up completed wells are described in the accompanying article.

Two special devices for handling gas at pressures encountered in drilling-in are illustrated and also a method of hookup for completed wells.

allows high structural wells to show water within a few days after completion, sometimes initially, and before wells which are situated much lower structurally.

The rock pressure in the field in the early days of development was around 1300 pounds, but this has since decreased to about 1000 pounds. This high gas pressure, coupled with large volumes, tends toward a long flowing life, and many wells continue to flow naturally even after making water percentages as high as 90 to 95 per cent.

Setting Casing With Reference To Pay Zone

In general the practice of setting casing has been very uniform throughout the field. The most variation has been on the surface pipe. The length of this string is governed by the conditions encountered in each well. From the central portion of the field to the southern extremity 12½-inch casing is set on the Barstow sandstone at depths varying between 150 and 350 feet.

To the north and east of the central part of the field cavities are often found in and below the Barstow sandstone. These cavities often cause the rotary drilling well to lose circulation with subsequent caving and sticking of rotary drill pipe. Therefore, it is usually desirable to shut off these cavities with casing. To attain this, two methods are in common use, and the one used is usually decided upon according to the ideas of the individual operator.

First: he may reduce the hole on the sandstone and "rathole" ahead with a rock bit; if a cavity is encountered, he then reams the hole through it and runs casing. This

W. D. Brookover, vice president of Panhandle Refining Co., Wichita Falls, and in charge of its production activities, is a former Gulf man. Before joining the Panhandle he was assistant to H. A. Melat, Fort Worth division manager of the Gulf Production Co.'s field activities. Mr. Brookover was on the program at the Galveston meeting of oil company engineers

method is usually considered more dangerous than the second method which involves starting a larger hole and setting 15½-inch casing on the sandstone and later running 12½-inch casing if a cavity is found. The hole can then usually be drilled to the top of the brown lime at which point the inner string of casing is set. This string is usually 8⅝-inch O. D., although low structural wells often run 6⅝-inch pipe and high wells run 9 or 9⅝-inch pipe. From this point on to the completion depth the lime walls of the hole are usually firm enough to stand without casing or liners. In a few cases it has been necessary to run another string of casing in the lime to shut off caving ground, upper gas strata, or pays which have gone to water.

Both cable tool and rotary methods are used for drilling wells to the pay in the Hendrick pool after casing has been set on the top of the big lime.

Cable tools are used almost entirely on the lower part of the structure where upper gas strata has not been encountered, and rotaries are more popular in drilling in wells on the crest of the structure. This is due to many difficult and long drawn-out jobs with cable tools in high gas pressures and also to the necessity of having to drill under pressure through upper stratas yielding as much as 10,000 barrels of oil and it is desired to drill to the lower more prolific producing zones.

The writer has been in close touch with practically all the companies in the field, and it is the opinion of the majority that the cable tool method is the best for drilling into the pay, provided the above mentioned difficulties can be overcome. The reasons are: first, the operator knows at all times how much oil the well will make at the depth he is drilling; second, there is no danger of mudding off pay zones; third, if water is encountered, the exact depth it is found is definitely known. Even though one cores all of his pay with rotary it is rather difficult to pick out formations bearing water from those producing oil.

Practically all wells in Winkler field are now drilled with rotary to the top of lime, where casing is set and cemented. If it has been decided to complete with cable tools, the rotary is moved off; tools are then rigged up; the plug is drilled; and casing is

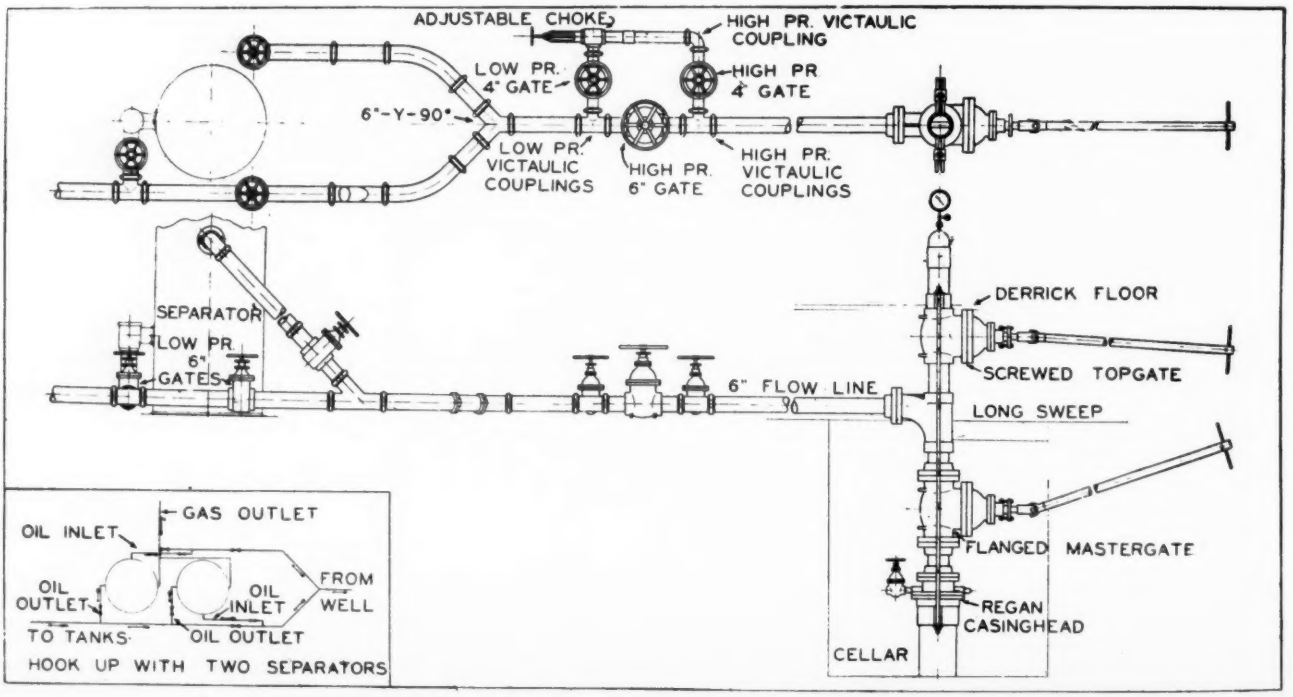


Fig. 2.—Blowout preventer hookup used in the Winkler field which provides for compounding the ordinary pumps used with a rotary rig to secure pressure to force water back into gas formation, thus killing off the gas, when drilling in

tested. It requires approximately ten days to move off rotary and rig up cable tools. After this has been done and drilling resumed the average time for completing a well to the main pay zone, which is approximately 400 feet in the lime, is about 20 days, taking some ten days longer on an average than drilling in with rotary tools.

To overcome the difficulty of drilling through high gas pressures and large oil pay zones, two types of high pressure oil savers have been used. One of these is the Craig head, developed by Homer Craig to meet the above mentioned conditions when they were encountered in the prolific Mexican fields around Tampico.

The author was unable to obtain a drawing of the Craig head. It consists of a plunger carrying a stuffing box on top, which packs off the drilling line. The plunger works through a stuffing box incorporated in an inner body that locks automatically into an outer body when tools are snubbed into the hole and releases as the top of the rope socket comes in contact with the head when tools are pulled out. Several wells have been successfully drilled in with this type of oil saver.

The other high pressure oil saver has been developed by the Roxana Petroleum Corp. for the same purpose. Fig. 1 shows the details. It consists of the plunger of a plunger-type pump commonly used throughout the industry. This plunger has a stuffing box at the top where the wire line is packed off. The plunger runs through two cast iron liners taken from the above mentioned pump, which act as a stuffing box for the plunger. These liners are held in a steel jacket with ball and socket joint in the middle, allowing the plunger on the stroke of the beam to move in any direction without bending. This ball and socket joint is incorporated in an inner body which, when snubbed into the outer body, comes in contact with a rubber ring that has a by-pass, allowing pressure from the well to rush behind and expand the ring. This acts on the same principle as C-Ring packing in that it is no more difficult to keep leakage from occurring with high pressure than it is with only a few pounds pressure.

With this oil saver tools can be snubbed into the hole, and as the body makes contact with the rubber, all flow is sealed off and the driller can then lock four bolts with handwheels holding the oil saver in place during drilling without encountering any oil or gas flow.

Some 15 wells have been drilled in with this type oil saver with very satisfactory results. Therefore, it can be said as operators come to be more familiar with the operation of oil savers that will withstand high pressures, more cable tool drilling will be done in the future in all lime fields where heavy gas pressures formerly made it almost prohibitive.

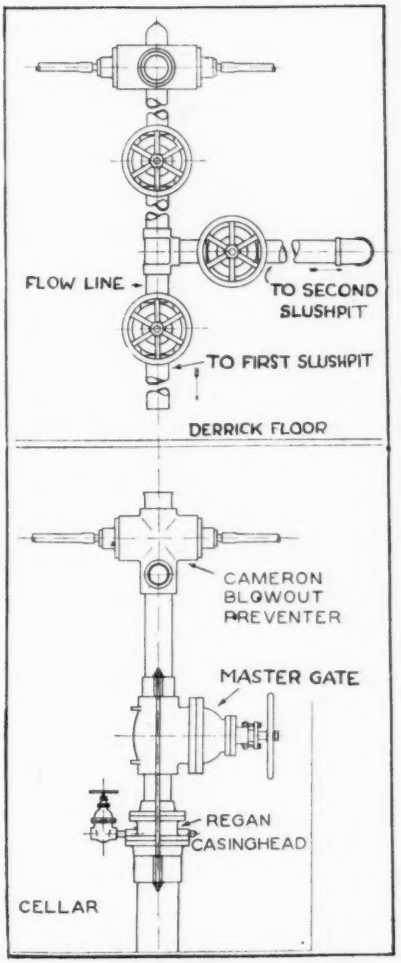


Fig. 3.—Type of hookup for completed well connections used by the Roxana Petroleum Corp. in the Winkler field of West Texas

When wells are drilled in with rotary after having set pipe with this same method on top of lime it is only necessary to wait long enough for cement to set to drill the plug and test casing. After this has been done drilling is begun with clear water.

It has been found that approximately twice the hole can be made with clear water as with mud. Therefore, all operators prefer to use clear water until increasing gas volumes prohibit its further use, then the wells are mudded up. This usually occurs around 300 feet in the lime. Gas strata are found, however, from the top of the lime to this depth which contain varying volumes of gas and in most cases by the use of a blowout preventer, such as the Cameron, which is popular, the drill pipe may be pulled off of bottom and the pressure sealed off with the rams and water forced back into the gas formation with high pump pressure.

The required pressure can be obtained by compounding the ordinary pumps used with a rotary rig by which method the driller can build up as much as 1500 pounds pressure. Fig. 2 shows the blow out preventer hook-up. Pumping the well by this method usually kills the gas for several hours, giving the driller enough time to make a round trip, change rock bit cones, and resume drilling.

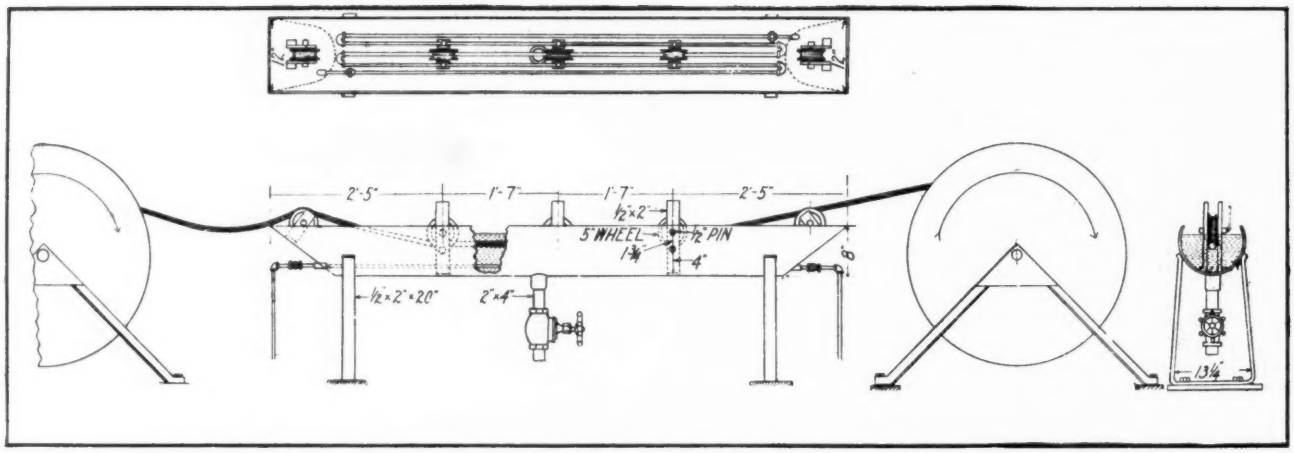
There is no clay in the field. The closest suitable clay deposits are found at Jal, N. M., some 20 miles away, and the bulk of the supply comes from this source. However, some is hauled in from irrigation canals some 40 miles away, and still another supply comes from the brick and pottery yards at El Paso. Therefore, mud is very expensive to manufacture. The material ranges in price from $12 to $14 a ton on the location. To prevent waste the clay is ground and sacked, and in this way can readily be mixed in steam boxes prepared for the purpose.

When drilling in with rotary most of the operators prefer to core the pay, and very good results have been had in core recovery as well as in footage made with the core barrel. Two core barrels have been used. They are of the rock bit type and both have proved satisfactory. However, it has been noticed that when one gets a pay of considerable size with the rotary either returns are lost altogether or a considerable part of the mud is lost before the drill pipe can be pulled out of the hole. This indication of pay enables the operator to drill in without coring and feel fairly certain what he has before bringing his well in.

After the well has been drilled in and before bailing, the well is hooked up with "Christmas Tree" connections and gas trap set. After bailing, the well is choked and turned into the stock tanks.

Some very large wells have been encountered. The largest has been 69,000 barrels, and numerous wells have been drilled in making as much as 1000 barrels an hour. It is necessary to take out all friction in flow lines and set the separator as close to the well as possible in order to obtain the maximum possible production. Many tests have shown that any of the more popular makes of separators approximating 4 x 16 feet in size will handle as much as 20,000 barrels of oil a day under the working pressure of the trap if large enough lines from the separator are laid to insure a minimum of line friction. This, of course, depends upon the length of the lines, et cetera.

Fig. 3 illustrates the hook-up used by the Roxana Petroleum Corp. in the Winkler pool and which has proved very satisfactory. Instead of the ordinary cross tee that has generally been used on well hook-ups, the Roxana hook-up uses a long-sweep tee with a six-inch flange sweep. This eliminates all bends and turns in the flow line and allows a straight six-inch line to the gas trap. A "Y" has been provided just beyond the choke, and if necessary to set another trap, this line can be extended for that connection. The accompanying sketch is self-explanatory, and we consider it one of the simplest well hook-ups in the field.



Wire line lubricator used by the Vacuum Oil Co. in the Lockport, La., area for the past year. It was built in the company's oil field machine shop. The trough is made from old casing. The drawing is on the scale of an inch and a half to a foot actual size

Field Lubrication of Wire Lines

GALVESTON, Texas, Sept. 6

STRESSING the fact that proper lubrication of wire lines doubled the service of the material, W. C. Thomas, manager of drilling and production for the Vacuum Oil Co., Houston, described to field operators methods and equipment his company used in the field to lubricate their lines.

This was at the meeting of the Texas-Louisiana-Arkansas district, American Petroleum Institute Division of Production and Development Engineering, Galveston, Sept. 5 and 6.

Mr. Thomas described the results of experiments which in one case increased the hours in service from 303½ for a non-lubricated line handling a four-inch drill stem, to 696 hours for the same type of line lubricated. In another experiment a 6 x 19 plow steel factory lubricated line handled 461.6 ton miles, while the same type of line lubricated by the oil company's field forces handled 847.1 ton miles. Both lines were used under the same conditions on the drilling rig.

Mr. Thomas said in part:

"Generally speaking, a line after being placed in service is lubricated only by pouring either a can of crude oil or engine oil over the line after it is spooled on the hoisting drum. This practice does not provide adequate lubrication, since the greater portion of the oil is quickly thrown off and that which enters the line tends to deteriorate the factory lubricant contained in the core. After spooling a line on the hoisting drum it is good practice to apply a heavy lubricant daily to that portion of the line which runs on the drum.

"A wire line lubricant must lubricate both externally and internally. The internal lubrication must penetrate the line until each individual wire becomes covered with a film of oil. The core must also receive lubrication to prevent deterioration of the lubricant it initially contained.

"A new line placed in service soon becomes very oily which is caused by the lubricant squeezed out of the core. After the core loses its lubricant, deterioration within the core is very rapid and the line begins to flatten and break. Where adequate field lubrication is furnished to the core, the core retains its original lubricant longer and the line retains its flexibility and original shape much longer.

"External lubrication has two functions. It must reduce deterioration and abrasion. A wire line is subject at all times to constant side wear on the line as it passes over the sheaves and wear is also caused by the line spooling over itself on the drum. Lubrication will certainly minimize such wear.

"The outside wires of the cable are constantly being covered with water and when a line is permitted to run dry this water quickly finds its way to the interior and causes oxidation or rust. After the wires become covered with rust the flexibility of the line is greatly reduced and the bending stresses become more detrimental. Water has no chance to enter if the outside of the line is covered with a lubricant which cannot be thrown off.

"We now have to consider the kind of lubricant to be used and the manner of application.

"TWO important factors should be considered when selecting the lubricant for this work. First, it must be of such a nature as to penetrate the line and second, must remain on the line after application. The oil used in the experiments discussed hereinbefore is a very heavy lubricant, the name of which will be gladly furnished by the writer upon request.

"The manner of application for field use must be one which will not require a great length of time and at the same time be very simple. Such a lubricator illustrated in Fig. 1, has been used by the Vacuum Oil Co. in the Lockport, La., area for the past 24 months. This lubricator can be constructed in any oil field machine shop. The trough can be made from old casing.

"A permanent lubricating station where steam is available for heating the oil permits the lines to be lubricated as received and stored until needed. Upon receipt of a line the oil is heated to the boiling point and that temperature is maintained until the line is lubricated thoroughly.

"The line is passed through the hot oil at the rate of ten feet per minute and three men can perform the operation with ease. Each line requires about fifteen gallons to lubricate thoroughly. After lines are lubricated and placed in storage they should be moved from time to time to prevent lubricant from draining off."

Diameter of hoisting drum and sheaves in both the crown block and travel block are included in the records the Vacuum Oil Co. keeps of its wire lines, Mr. Thomas reported. The company figures this information an important factor in judging the performance of this material in the field.

The form of record for wire line performance is divided into two parts, Identification and Field Service.

Under Identification the following headings appear on the record form: Line No., Maker, Order, Reel No., Length, Trade Name, Material, Construction, A. P. I. Grade, Cost Per Foot, Total Cost.

Under Field Service the following: Well No., Date Installed, Depth Drilled From, To, Length Cut, Round Trips, Size of Pipe, Number of Lines, Diameter of Drums, Crown Block Type, Crown Block Diameter of Sheave, Travel Block Type, Travel Block Diameter of Sheave, Ton Miles, Cost Per Ton Mile, Total Ton Miles, Service Cost Per Ton Mile, Remarks.

Ohio Oil Experiments With Restoration Of Pressure in Lima Field

FINDLAY, O., Sept. 8

IN AN old field, where rejuvenation methods have not previously been attempted, the Ohio Oil Co. is conducting a repressuring experiment that will either prolong greatly the life of the field or will signalize the end of production on a number of leases. Operation, with stimulus in the form of restored sand pressure, has become uneconomic on many wells. Hence, the experiment is being watched closely by many producers in the "Trenton Rock" field of northwestern Ohio.

Elsewhere in the large territory producing from Trenton limestone, repressuring experiments have been unsuccessful. Some were attempted in areas where the oil reservoirs were merely fissures in the limestone. Hence, with no underground communication from one cavern to another, the air drive could not be effective.

In selecting the territory for the present experiments, the Ohio had in mind the conditions that prevent success and after careful examination of all existing data, chose an area northwest of Fremont, Ohio, in Sandusky township, Sandusky county. Agreement was made with outside owners of leases in the 1900-acre block assembled whereby the Ohio would be given part of the increase in production if such happy result were obtained.

Production had declined to very small amounts. Some time prior to the beginning of the experiment one month's average gauge was 13.87 barrels daily from 146 wells—less than one-tenth barrel per well per day. It is possible for some farmer owners, with no organization at all, to operate such wells, as it is to them a side line, like raising asparagus, but the oil company dependent on oil alone must have more production than that, particularly when it is "sour" oil.

The pay zone in the Trenton lime in the area selected was known to be uniform. Initial productions and declines of the wells had been about alike. It was known that the pay was of good porosity and no water at all had ever been produced from the sand. Original rock pressure was only 25 pounds which, in the 32 years of operation, had declined practically to zero.

Average depth of the wells in the repressured block is 1408 feet. The pay is found at an average depth of 1332 feet and the zone of best saturation is about 10 feet thick.

The plant is in the center of the 1980-acre block and consists of a Superior oil engine (convertible to gas) of 85 h. p. and a belt driven Worthington tandem, two-stage compressor with four-inch intake and two-inch discharge. The compressor is capable of delivering 325,000 cubic feet per day at 400 pounds pressure.

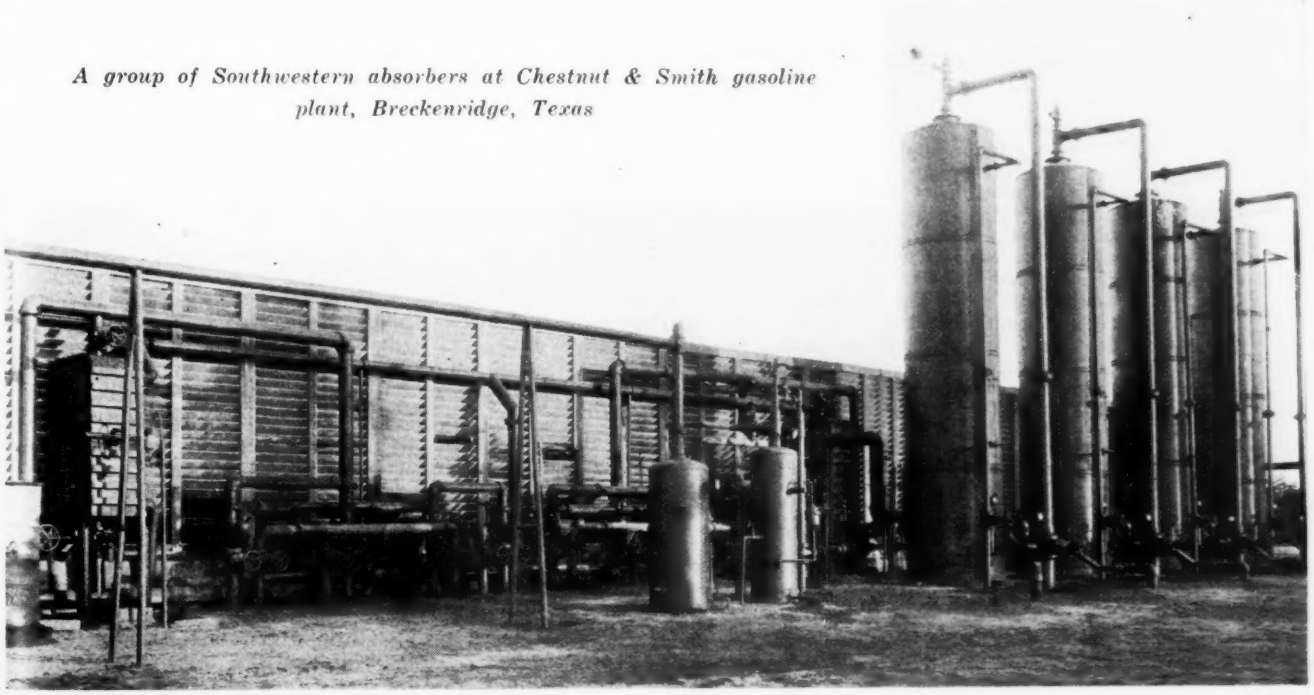
Three pressure wells are now admitting air to the sand. They are so located as to test a large area, one being 2450 feet north of the plant; one 3250 feet southeast; and the third 4380 feet southwest. Pressure wells were cleaned out and equipped with tubing and packer.

Starting last December, air was admitted at 150 pounds pressure; this was gradually increased as the capacity of the wells for taking air was ascertained until now 400 pounds pressure is maintained. The plant has operated continuously for five months. The pressure wells are taking an average of 45,000 cubic feet of air per day each.

EXCEPT for an increase in gas estimated at about 200 per cent, no result has yet been had from the air drive. Productions of some wells have varied a little here and there and the fluid column in one well rose to the top of the casing; but the gross barrels of production remain at about the same point as when the work was started.

Encouragement is felt over the increase in gas. Prior to the begin-

A group of Southwestern absorbers at Chestnut & Smith gasoline plant, Breckenridge, Texas



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ning of the air drive there was so little gas that power had to be alternated. The Ohio Oil Co. has six central powers on its properties in this block and only one could be run at any time. The increase in gas occurred fairly soon after the air was started through the sand and, during the late winter months, there was not only enough gas to operate the powers full pumping time but plenty for steaming lease tanks.

Tests of the gas show considerable percentage of air in wells not only adjacent to the pressure wells but in some a considerable distance away. As high as 20 per cent air has been noted in a few wells. There is some evidence also of by-passing of air underground—missing nearby wells and traveling to others remote from the intakes.

It is the company's intention to continue the experiment for several months longer so that, if it is discontinued, it will be with the belief that an adequate test has been made. If successful it will, of course, lead to other installations in what is known as the Lima field, which covers many thousand acres and is fairly continuous production over several counties.

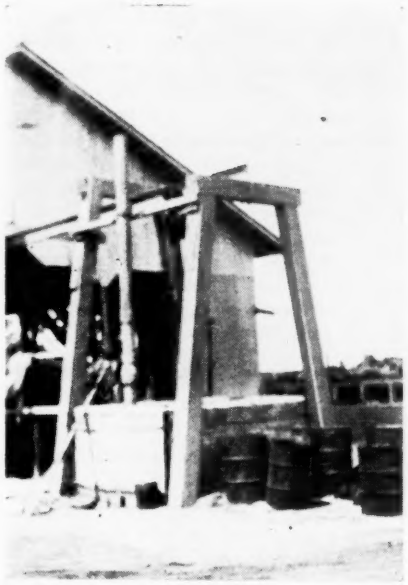
To Build Airplane Motor Of Diesel Engine Type

LOS ANGELES, Sept. 7.—The Emsco Aero Engine Co., with an authorized capital stock of $500,000, is preparing to build a factory in Los Angeles to manufacture airplane engines of Diesel type, the smallest of which will have 1000 horsepower.

E. M. Smith, president of a number of California concerns, is president of the new corporation and announces that the factory will be ready to operate soon after the first of the year. Lee M. Griffith, for eight years a member of the national advisory committee on aeronautics for the government, and engineer in charge of research laboratories at Langley Field, is to be vice-president and general manager.

W. J. Smith will be secretary-treasurer. The board of directors will be composed of the officers mentioned with the addition of W. A. Trout and E. W. Goeser. Details of the new engine have not been made public.

Waukesha Motor Co., Waukesha, Wis., has added a speed reducer to its multiple-cylinder heavy duty four-cycle gasoline and natural gas engine for oil drilling with rotary tools. It is known as the Waukesha herringbone speed reducer and has a ratio of 3.96 to 1. It is designed to do heavy work and operate under all conditions. The top cover of the clutch housing and clutch plates can be removed and new ones installed in short time.



Chemical vat used for cleaning old equipment at Humble Oil & Refining Co.'s Wink warehouse

Chemical Vat Used for Cleaning Equipment

HOUSTON, Sept. 8.—Equipment used by the Humble Oil & Refining Co. in the development of the Winkler county field gets a chemical bath whenever it reaches the warehouse at Wink for repairs or transfer.

Handling of equipment is facilitated by the raised floor of the warehouse, which is about on a level with the floor of a truck or trailer. Hoists connected to runways in the top of the warehouse permit quick handling of heavy equipment, which is also transferred by such means to the chemical vat.

After soaking for several hours in the chemical tank, or "Oakite vat," the equipment is again ready for hoisting to the floor of the warehouse, there to remain until sent back to the field.

The vat is of simple concrete construction, with heavy timbers built around it to support the runway on which the hoist operates.

Mineral Statistics for 1927 Out

WASHINGTON, Sept. 8.—A preliminary statistical summary of the quantity and value of mineral products in the United States, including petroleum, for 1927 has just been published in booklet form by the U. S. Bureau of Mines from data furnished by the division of mineral statistics.

Mineral production in the country, the compilation shows, diminished both in output and unit values during 1927. Total value of all products was $5,520,000,000, or 11 per cent less than in 1926 and 3 per cent less than 1925.

Production of crude oil and natural gas increased but value declined.

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Adaptation of Fordson tractor equipped with pipeline pump used for quick transfer under its own power in Tiner's corner field of southwestern Jones county, Texas

Portable Emergency Pumps For Pipe Line Service

HOUSTON, Sept. 7

PORTABLE pumping units for pipelines are solving the problem once faced when discovery wells were completed 10 or 15 miles away from earlier oil production.

Depending on the type used, the units may be moved quickly under their own power or hauled behind truck or tractor. In either case, pumping power is available as soon as the necessary 2-inch or 4-inch gathering line has been provided for crude outlet.

In the old days, when only steam was used, there was always delay in the installation of pipeline pumping equipment. Now production may proceed without undue construction of tankage while steam plants are being built.

Generally it is considered economical still to use steam plants, unless electricity is available, where future permanency of the installation is established. Portable units operating on gasoline build up fuel costs when used over indefinite periods. Their use, so far, therefore, is intended mainly for emergencies.

First portable units used in the shallow sand pay region fringing the general Ranger territory on the west were of the type hauled to location behind truck or tractor. They were mounted on wheels for quick transfer, but had no mobile power.

More recently two types of portable units that may be moved under their own power are available. One is an adaptation of a Fordson tractor on which a pump has been mounted after use of channel irons for extension of the frame. The other is a new type unit distributed by the Wheatley Bros. of Kansas City.

An accompanying picture shows a Fordson unit the Humble Pipeline Co. is using in the Tiner's Corner field of southwestern Jones county, at the site of the Huconey Oil & Gas Co.'s discovery well.

The Fordson operates a 4½ x 10 Gardner pump on chain drive. A 2-inch connection shown at the lower left of the picture connects with the well, where a combustible mixture of recycled air[1] serves for fuel. The upper 3-inch connection shown at the right of the pump is the discharge installed above a 4-inch suction line.

It is only necessary to unflange the three connections mentioned before driving the Fordson pumping unit to another lease and hooking-up on similar lines for immediate operations.

Another picture, taken in the northwest part of the Yates field of Pecos county, shows a Wheatley unit equipped with Waukesha motor and Gardner pump. It is one of the type units requiring to be moved by truck or tractor power.

Besides being useful in emergencies, either type of portable unit serves the industry by its being readily available for pick-up pumping of oil in case of a pipeline break.

[1]NATIONAL PETROLEUM NEWS, page 38, Aug. 22, 1928.

Wheatley Bros. portable pumping unit being operated on Yates field gathering line of Humble Pipeline Co.

New Patents

August 28, 1928

REFINING

Heat Transfer—John E. Bell, Brooklyn, N. Y., assignor to Foster Wheeler Corporation, New York, N. Y. Filed Sept. 17, 1923. No. 1,681,926.

Return Tubular Superheater Boiler—John Primrose, Richmond, N. Y., assignor to Foster Wheeler Corporation, New York, N. Y. Filed Jan. 29, 1923. No. 1,681,952.

Method of Disposing of Acid Sludge and Spent Clay in Oil-Refining Plants—James M. Cory and Fred H. Bunke, Lima, Ohio, assignors to The Solar Refining Company, Lima, Ohio. Filed Jan. 27, 1926. No. 1,682,369.

Motor Fuel—Earl C. Hennen, Charleston, W. Va., assignor to The United States Nito Co., Inc., Columbus, Ohio. Filed Mar. 7, 1928. No. 1,682,561.

Liquid Phase Purification of Distillates—Thomas G. Delbridge and Joseph Bennett Hill, Philadelphia, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa. Filed June 28, 1926. No. 1,682,603.

PRODUCTION

Grab for Use in Wells—John A. Cady, Los Angeles, Calif. Filed Aug. 3, 1926. No. 1,682,481.

NATURAL GAS

Apparatus for Producing Carbon—Chauncey Matlock, Brooklyn, N. Y., assignor to Monroe-Louisiana Carbon Company, Monroe, La. Filed Jan. 5, 1921. No. 1,681,945.

MISCELLANEOUS

Apparatus for Purifying Used Lubricating Oil—Edward L. Gross, Chicago, Ill. Filed Dec. 3, 1919. No. 1,681,980.

Fuel Briquette—George F. Sheehan, Seattle, Wash. Filed Aug. 24, 1927. No. 1,682,195.

Tank-Gauging Apparatus—Alfred Kinzbach, Sour Lake, Tex. Filed Sept. 16, 1924. No. 1,682,286.

Process of and Apparatus for Distillation of Oil from Oil Shale—Herman B. Kipper, Muskegon, Mich. Filed Aug. 2, 1923. No. 1,682,287.

Motor Fuel—Earl C. Hennen, Charleston, W. Va., assignor to The United States Nito Co., Inc., Columbus, Ohio. Filed Mar. 7, 1928. No. 1,682,561.

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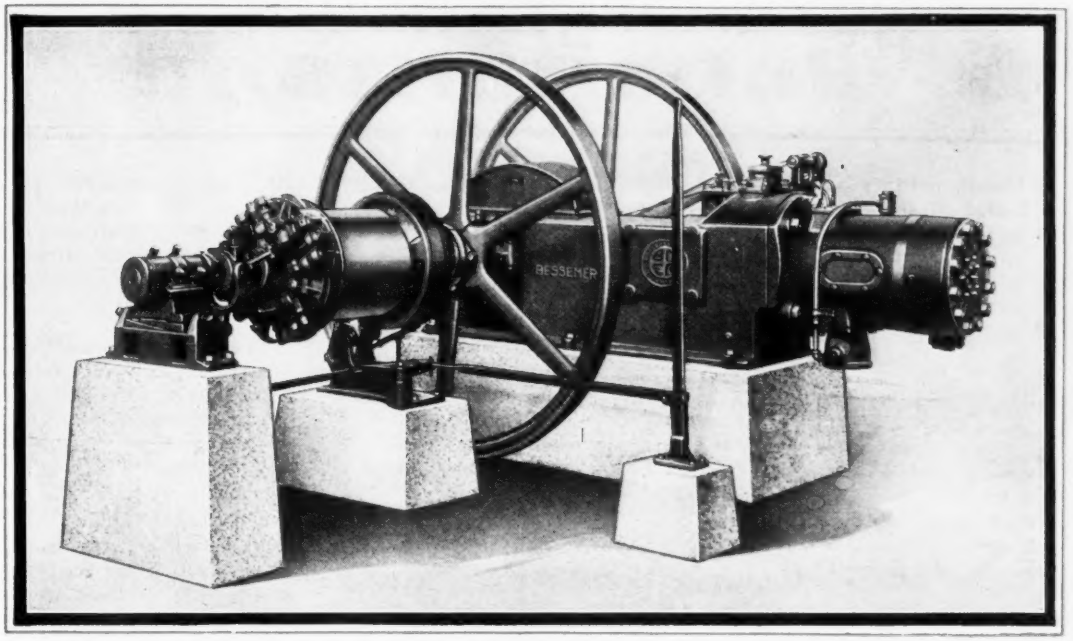

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BESSEMER

Our Industry—A Page of Facts and Personalities

By Paul Wagner

National Petroleum News

Col. Dan T. Moore, military attache at the White House in the Roosevelt administration and more recently sales representative of the Northern Pump Co., Minneapolis, in the Houston territory, has returned to headquarters after training camp work at Texarkana.

* * *

W. H. Shields, formerly Cushing district foreman of The Texas Pipeline Co., has been transferred to Fort Worth in connection with his company's construction of a trunk system from west Texas to Port Arthur. He was succeeded at Cushing by T. F. Reagan of the Tulsa-Kiefer district.

* * *

E. J. Nicklos, Tulsa division manager of The Texas Co., with jurisdiction over operations in Oklahoma, Kansas and Kentucky, spent his vacation in Minnesota.

* * *

Geological investigations under way in the Vicksburg-Jackson area of Mississippi by the Sun Oil Co., Dallas, are in charge of D. J. Monroe.

* * *

B. F. Banahan has succeeded L. H. Saunders as chief clerk in the production department of the Louisiana Oil Refining Corp., at Shreveport. Mr. Saunders is now identified with the Sam Cook Drilling Co., at El Dorado, Ark.

* * *

C. A. Yoakum, formerly stationed in the Seminole district, is now chief geologist of the Sinclair Oil & Gas Co., at Tulsa. He is being assisted by John F. Kinkel, transferred from the Wichita, Kansas, office. Mr. Yoakum succeeded Wesley G. Gish, who recently went to Fort Worth to take charge of Sinclair land and geological activities in north and west Texas.

* * *

E. G. Allen, central division general superintendent of production of the Roxana Petroleum Corp., with Dallas headquarters, spent his vacation in Rocky Mountain territory.

* * *

David Donoghue, land and geological director of the Texas Pacific Coal & Oil Co., Fort Worth, accompanied by his family, recently drove to Santa Fe, New Mexico, for business and pleasure.

* * *

The Safety Committee of the Pure Oil Co. in the Norphlet, Ark., territory is composed of J. C. Mobley, H. B. Harris, C. Posey, S. M. Mohan, M. L. Dumar, H. T. Myers, Fred Ratcliff, J. D. Dykes, J. E. Seigler, E. W. Wallace, E. E. Bendy, C. Dykes, J. Sanders, R. Holmes, O. Nichols and J. White. It is the policy of the Pure to organize safety committees in each of its important producing districts.

* * *

W. A. Moncrief, individual operator of Fort Worth and chairman of the Pecos county (Yates field) prorating committee, has been spending his vacation in the Rocky Mountain region. Before entering business for himself, Mr. Moncrief was vice president of the Marland subsidiary operating in Texas.

* * *

Sidney A. Packard, formerly identified with The Texas Co., in Colombia, South America, is now on the geological staff of the Louisiana Oil Refining Corp., at Shreveport.

* * *

John Kennelly of the land department of the Transcontinental Petroleum Co., subsidiary in Mexico of the Standard Oil Co. of New Jersey, is spending his vacation in New York.

* * *

C. S. Corbett, who has been stationed at Batavia, Java, for the Standard Oil Co. of New Jersey will return to the United States in October. He recently resigned as chief geologist of the Nederlandsche Koloniale Petroleum Maatschappij, through which the parent company operates in Java.

Charles B. Peters, long prominent in civic affairs of Tulsa, is a specialist in Osage Reservation leases. Much of his buying at recent lease sales in Pawhuska has been in connection with the Producers & Refiners Corp.

* * *

The latest method of geophysical prospecting for oil embraces an electromagnetic principle. It is that of the Swedish American Prospecting Corp., employed by the Gulf Production Co. for a survey of subsurface conditions in the Yates field of Pecos county, Texas.

No results of the survey have been made public, but the principle of the prospecting method was disclosed at the Boston meeting of the American Institute of Mining & Metallurgical Engineers by Karl Sundberg and Allen Nordstrom of Houston and New York, respectively, representing the Swedish American Corp.

Ore prospecting in the Taos range, north of Santa Fe, New Mexico, was described by Messrs. Sundberg and Nordstrom, who said that in tracing molybdenite deposits "current was introduced in the ground galvanically by means of linear electrodes laid at right angles to the strike of the formation and connected at one end by means of insulated wire to the poles of an alternating current generator.

"The electrodes consisted of bare copper wire laid out along a straight line and grounded every 10 feet by means of iron pins.

"Any flow of alternating current is surrounded by an electromagnetic field. In the case of barren ground the current flows uniformly between the electrodes and the electromagnetic field obtained is called the 'normal field.' The disturbances in this field due to the presence of ore bodies, or other bodies of good conductivity, are called the 'anomalies' or 'secondary fields.' The resultant of the normal and secondary field is the actually existing field.

"The normal field can be determined either by measurements on barren ground or by theoretical calculations. The normal field thus being previously known, a comparison between the actually determined (resultant) field in a certain area with the normal field will show if any secondary fields exist. The character of secondary fields will give, from theoretical considerations and actual experience, the most probable position of the conducting body that is responsible for these fields."

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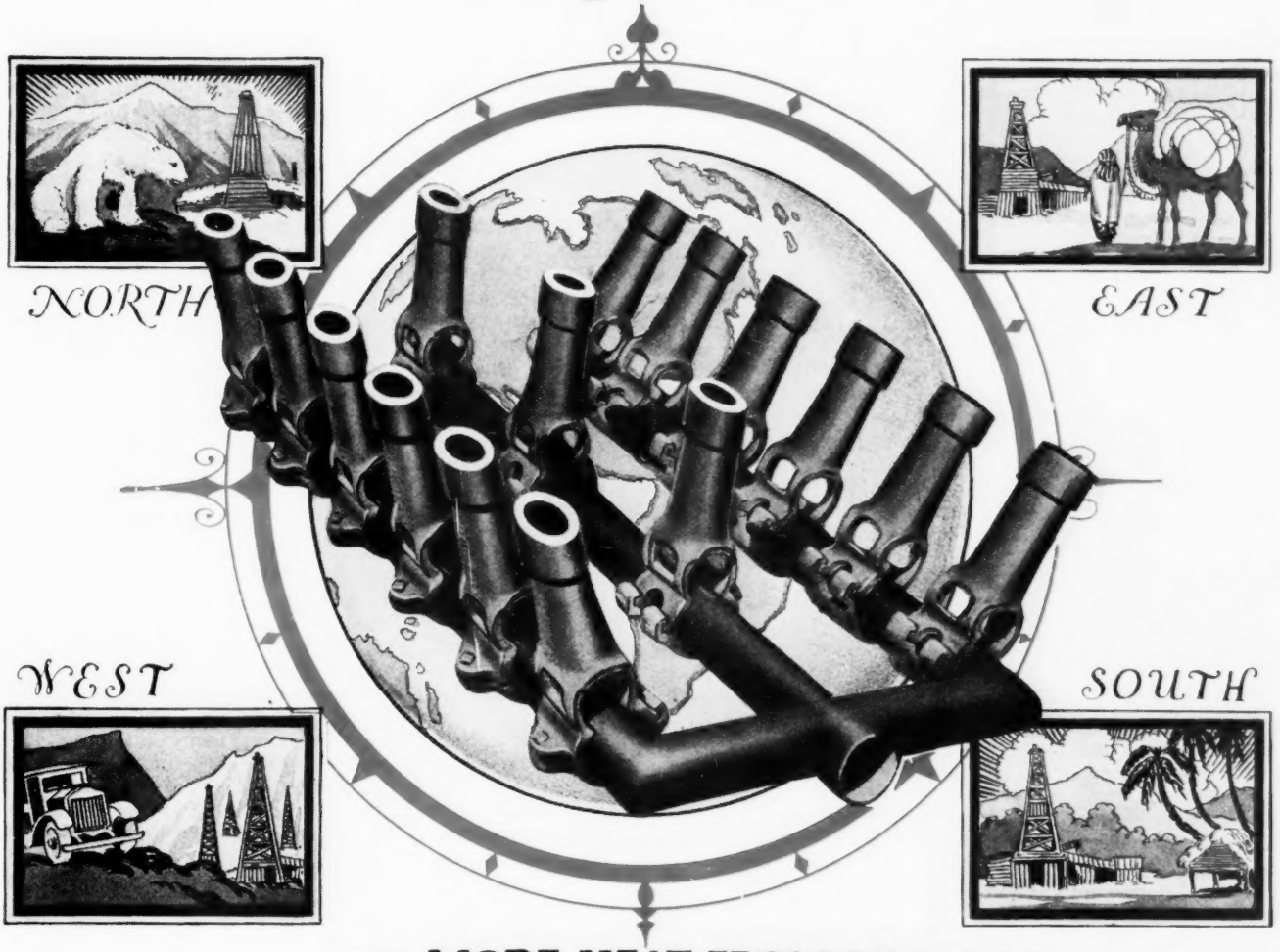

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CONTINENTAL

Principles Involved in Giving Credit To Bulk and Service Station Trade

By C. E. Votrian*

Read before Petroleum Section, National Association of Credit Men, at Chicago, Sept. 4, 5 and 6

THE amount of credit to be extended in any one case is governed by the willingness and ability of the customer to pay his debts when due. While the principles of credit allowance apply in service and bulk station credits the same as for credits in connection with sales in tank car lots, the procedure and application of the principles differ because of the number and size of sales made and the classes of people served, especially in service station credits.

Of the three C's (Character, Capacity and Capital) the first two, character and capacity, form the basis for determining service station credit allowances in the majority of cases. The applicant's character is determined from his reputation for prompt payment to others and his standing in the community. His capacity for payment is determined by comparing his income with his present obligations, taking into consideration the permanence of his income and his tendency to incur obligations.

Recently an application for service station credit was refused one applicant who, according to all available information, had always paid his accounts promptly. The credit manager considered him a poor moral risk because of his occupation. The applicant was indignant and called the credit manager by phone and demanded the reason for refusing his application for credit. He was informed by the credit manager that he should know without being told. This credit manager informed me that the applicant then "proceeded to trim his foretop," whatever that is. In less than 60 days this applicant pleaded guilty and was sentenced to Atlanta for violating the prohibition laws.

Individual service station customers are requested to sign a special form "Credit Application" containing the following information: name, mailing address, occupation, business address, name of employer, amount of income, where banking, location of and value of real estate if any, make of car, amount of credit desired for 30 days, two credit grantors and addresses, two personal references, their addresses and occupations. This application also bears signature and recommendations of party taking application.

The information given on the application form is the basis for making the investigation through the regular channels. In outlying towns where credit agencies have not been established it is customary to make arrangements with a lawyer, banker or other professional man of good reputation who has resided in the town for a number of years to supply credit information at a small cost.

The second function of the credit department is to follow up its credits to the end that debtors meet their obligations when due. This can be done only with the complete co-operation of the bookkeeping department. When a customer's account is found to exceed his credit limit the credit manager is notified. The action taken by the credit manager depends on the present circumstances surrounding the account. The credit limit is either increased, collection made or sales discontinued and the stations immediately notified. If the attendants disregard these instructions and continue to sell they are held responsible and made to pay for unauthorized sales uncollected after 30 days.

When an individual's credit is cut off he should be notified by the credit manager at the same time the "cut off" notices are sent to station attendants. Instances are known of good business being lost because the station attendant advised the customer or member of his family in a tactless manner and many times in the presence of friends that it would be necessary to pay cash because his credit had been cut off. Not only the business of the offended customer but that of his friends may be lost in this manner.

I want to mention the practice of certain well-to-do individuals found in every town who pay their accounts whenever it is convenient, at times letting it "ride" for 60, 90 or more days. Knowing the account is good the customer is not reminded that it is past due because of being afraid of offending him and losing his business. On the strength of his reputation as a wealthy man he is permitted to reduce materially the profits on his purchases because the management knows this individual will have no trouble securing credit on his own terms from a competitor. In some instances of this kind the management is responsible but in many cases this practice could be stopped by better cooperation among credit managers.

Bulk station or tank wagon credits present different problems for the credit man than service station credits. A more thorough and careful investigation is necessary. In basing his opinion on the available credit information disclosed by the investigation the credit manager must exercise judgment in distinguishing between legitimate credit risks and those classed as chances.

The salesmen are in a favorable position to become acquainted with the business sagacity and local reputation of tank wagon resale customers so the credit man relies on the salesmen as an important source of credit information. Salesmen obtain information regarding the customer's local reputation from remarks made by competitors or fellow salesmen. They actually see the locations of customers' stations and their suitableness with respect to the trade served, competition and avenues of traffic.

The credit manager is dealing with people who in many instances have very little capital, a limited knowledge of business and a poor understanding of the principles of credit extensions. If the size of the account justifies and it is convenient for the sales manager to make a personal call on the resale customer information can be obtained that could not be secured in any other way and a definite understanding had as to terms and strict observance of same in addition to rendering valuable assistance to the sales department.

After all available credit information is obtained from the various sources the credit manager fixes the credit limit in terms of settlement and then follows the account closely to see that terms are strictly adhered to. Tank wagon sales to established local firms cause little trouble as a rule if care is exercised in allowing credit and 30-day terms can be allowed. Terms to resale customers should be given careful consideration and if there is any doubt in the mind of the credit manager, load to load, or C.O.D. terms should be insisted upon.

A condition exists in the newly developed oil fields where resale customers, while having a good business are unable to comply with short terms because of being forced to wait 30

*Assistant treasurer, Barnsdall Refineries, Inc., Tulsa.

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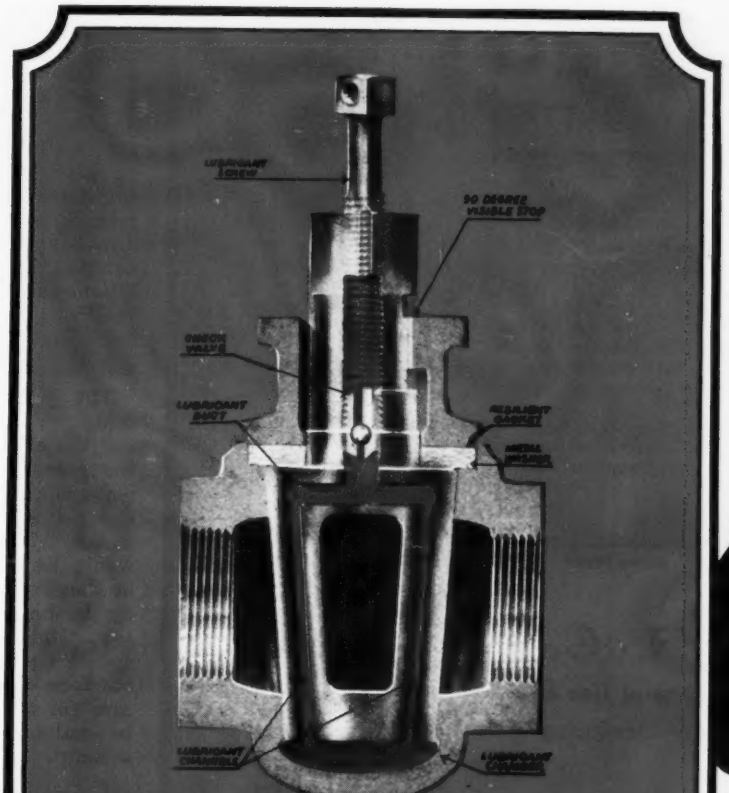
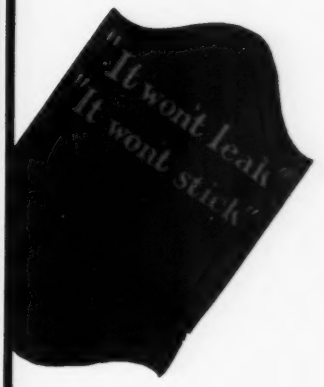
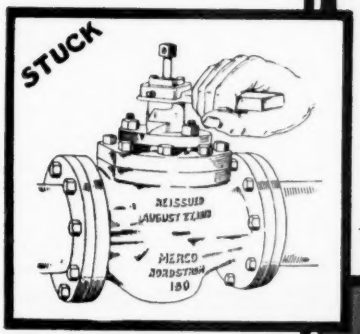
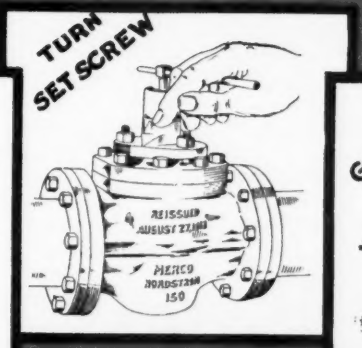
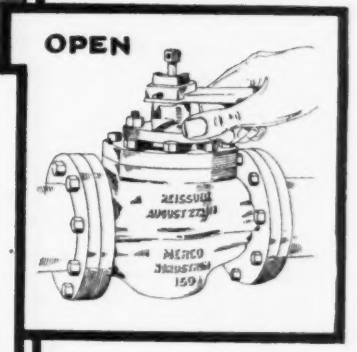






If, after inactive service, the valve becomes hard to turn, the Operator simply turns the small lubricant screw at the top.





The lubricant, exerting pressure, lifts valve from its seat and makes turning easy. A quarter turn opens valve fully. *Ask for Catalog.*

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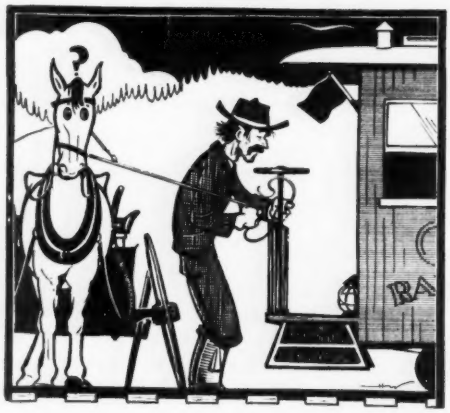

It does make a difference what a man ties up to

A MOUNTAINEER, declares an authentic press dispatch, tied his horse to a caboose; never had seen a train before. Horse dragged into eternity, and railroad was sued. The mountaineer lost: lost his horse, lost his suit, lost his dignity—all because he was not in touch with modern methods.

Some Natural Gasoline Men—sorta careless in the equipment they hitch up to—are losing thousands of gallons of gasoline every day, and don't know it. Gasoline that isn't recovered on the first grab is irretrievably lost. Every gallon unrecovered is a profit undiscovered.

Nothing better to tie to than Campbell-designed plants. For high efficiency, low cost per gallon extracted, and ease and safety of operation, Campbell equipment has no superior; as shown by one competitive test after another.

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days or more before receiving payment for their sales to drillers, contractors and oil companies. The practice of taking assignments of the customers accounts receivable is common in these cases which defers payments for another 20 to 30 days or longer. This practice continues even after the customers are able to make prompt payment of their account unless it is stopped by the credit manager.

It is a common practice for the sales manager of a company to make regular visits to customers for the purpose of establishing more friendly relations but the credit manager usually pays his visit to the customer when he gets behind in his payments and in many cases it is far from being a friendly visit. Would it not be good practice for credit managers to make periodical visits to tank wagon customers? In addition to establishing a friendly relationship and being able to observe business conditions at close range the customer would be pleased to see the company take such an interest in his account and him.

The principles of credit extension could be explained to the customer and the effect upon all concerned, from the manufacturer and producer of raw materials to himself, if credit terms are not strictly observed by the consumer. How much more pleasant it would be to call on Bill Jones when he begins to show signs of slowing up in his payments and be able to say, "Hello Bill, I have come back to see if we can not help you get back on your feet," than to have to meet him for the first time when you call to make collection of his past due account.

Jenkins Bros., 80 White St., New York, valve manufacturers, have placed on the market a new line of bronze valve with renewable resilient disc for 250 pounds steam working pressures. The disc readily conforms to the seat, and insures a tight valve without regrinding.

The line comprises globe, angle, cross and horizontal and angle check patterns furnished screwed or flanged in sizes ranging from ¼ to 2 inches. Bonnet screws over the body add strength to the construction.

The Prest-O-Lite Co., Inc., 30 E. 42nd St., New York City, has developed a flood light attachment of new design for use with small tanks of dissolved acetylene, the same as are used for truck and tractor lighting.

Prest-O-Lite gas tanks are available from service stations throughout the country. The lighting unit can be used for illumination in dark places and for facilitating night work of all kinds.

"Who is *that* man?"

"He seems to be mighty interested in that blue-print. What's he got to do with it?" asked the plant manager.

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LINDE OXYGEN

Accounting Methods for Refineries

Article Six

Forecasting and Controlling Plant Operations to Sales Needs

By Henry W. Ralph

THE next article in Mr. Ralph's series on Refinery Accounting Methods will contain a general description of the various factors which are important in maintaining satisfactory operating reports and in developing cost information on stills of different types. The preparation of proper cost records will be described.

IN EVERY industry there is a fairly definite interval of time required to put changes in manufacturing routine into effect. To outline objectives more frequently than such changes can be put into effect is a waste of effort.

Important price changes may occur any day, and price changes in the petroleum industry should generally be accompanied by some change in manufacturing.

It is essential that a definite procedure be set up to develop what changes in manufacturing policy are indicated by the changed price structure; and that the manufacturing schedule actually in effect be reviewed so that, consistent with shipping commitments, and consistent with the future price developments that may reasonably be expected, the refinery will operate to maximum advantage.

Many things are extremely important in the successful conduct of a business. There must be a genuine esprit de corps. The individuals must be well trained; and they must have adequate facilities and supplies for the performance of their duties; there must be a meritorious product; there must be a genuine cooperation between departments.

From the standpoint of the chief executive, however, there is nothing more important than the ability to plan correctly and to have this plan properly transmitted to the entire organization.

If this is true, it is most important for the chief executives to make certain that there is, in good working condition, a procedure which will enable them to determine with confidence what their new objective shall be; and that such a procedure will function in the least time possible. And it is not less important that this objective be transmitted promptly to the entire organization.

To aid in accomplishing both these objects it will be found extremely helpful to have the same kind of set-up used for forecasting operations that is used in presenting summaries of completed operations. In other words, it is a good principle to insist that all operating reports be set up so that they lend themselves to easy use for forecasting purposes. The benefits of following out this principle must be experienced to be realized. Why it is so it is easy to understand. The mind becomes accustomed to following certain channels of thought and it is much easier to follow out a known routine than to learn two. In the planning of future operations, if the mind can follow channels similar to those followed in reviewing past operations, the attention is concentrated on the essential facts rather than on the eccentricities of the routine.

Because of this fact it is recommended that the ultimate set-up of the manufacturing schedule be similar in form to the set-up that has been adopted for the Summary of Operations. The handling of the detail facts necessary to prepare such a forecast will be different; but in general it will be possible, in forecasting, to use the same forms that are used to record facts on operations carried on.

It will also be practicable to use these forecasting summary sheets as the basis for issuing operation orders; although in the actual carrying on of operations the reverse is true—the basic operating records furnish the totals which appear in the various reports which summarize operations.

In making a production forecast it is necessary to have a more detailed knowledge of operating facts and commitments, both purchase and shipping, than can be obtained from the Summary of Operations for preceding periods.

In general, it is first necessary to prepare a tabulation of all definite contracts to deliver products and of estimated spot sales analyzed by periods during which shipment will be required. As long as the requirement for each period is definitely less than the capacity of the plant, it will be sufficient to prepare a forecast for the nearest period only; but if the shipping commitment for any particular period is excessive, it may be necessary to prepare a forecast for each period between the current period and the period of excessive delivery requirement.

In addition to the products required for shipment it will be necessary to know the minimum inventory requirement for the end of a period. This information is particularly important when making the forecast for a period in which the shipments in prospect are in excess of plant capacity.

When planning for any period, it it first necessary, on the basis of opening and closing inventories, purchase and sale commitments and normal operation of plant, to compare the total resources with total requirements and thus discover whether shipment can be made as desired.

If sufficient stock will not be available for any particular line of products, it will be necessary to determine whether the plant operation can be advantageously altered to meet the shipping requirements or whether it is better to make outside purchases to cover the deficiency.

When this has been provided for, decision must be made covering the ultimate form in which it is best to store any surplus petroleum stocks. There is excellent opportunity for the display of good judgment in making this type of decision. Some refiners have often proceeded on the basis that the utilization of full plant capacity was the important factor in earning profit.

THIS is undoubtedly important but usually other facts are equally important, sometimes more so.

The schedule most desired will be the one whereby plant operations can be maintained which will give the maximum spread between the total value of products (at market prices) and the total cost of raw material and manufacturing cost—provided that such products are marketable at those prices.

In making calculations covering the maximum margin possible to be obtained, it is necessary that adequate thought be given to future prices. On some products the market is so limited that a small quantity of dis-

tress stock may result in a severe decline in price.

In any organizations there will always exist a very definite attempt to eliminate from the manufacturing schedule those particular products for which it is felt the realization is not satisfactory, or which costs too much to make.

If it were possible to develop both these facts with precision—and the man best posted on manufacturing costs will admit that his task is impossible; and the man best posted on selling costs will admit that selling costs of particular products are not available—this would be of doubtful merit.

A better course than that is to set a fair market price on the article at the time of transfer and, if the selling organization can move it in connection with their other commodities through their distributing organization without suffering a definite loss, it will be to their advantage to do so. If the refinery can make it to sell at the agreed fair market price, without suffering a definite loss, it will be to their advantage to continue.

The problem of the selling organization is to make each channel of distribution profitable; that means, of course, each merchandising unit. The organization problem is thus more simplified than when one attempts to theorize on the manufacturing cost and the selling cost of a particular product, and there is much less likelihood that misinformation or a misinterpretation of partial facts will lead to false conclusions.

This does not mean, however, that thought shall not be given to the discontinuance of particular products for which the sales are very limited. Such products may even be made to meet the specific demand of an individual customer; and the transfer of his esteem later to a standard product at a saving to the refiner and the customer is often possible by enlightened sales effort. Periodic reports of obsolete and deteriorated stocks will serve to indicate the products that require such investigation.

Control at the Refinery

The problem of the manufacturing staff should be distinct from that of the chief executives which was touched on in some of the preceding paragraphs. The manufacturing problem should be limited to the production of specified quantities of petroleum products to meet standard specifications by methods which will utilize the plant to the best advantage.

The first requisite is a precise knowledge of the manufacturing operations necessary to produce the various products and to this must be joined a knowledge of the capacities of the various types of stills and the various processing plants. The capacity of any plant is dependent not only on the "thru-put" in a certain number of hours or days, but also on the length of time that must elapse between runs—time that is utilized in cleaning out, for cooling and repair work.

If there is a particular operation which is required on certain products and the plant capacity for this operation is limited, it is obvious that a bottle neck is automatically created. Due consideration must be given to such conditions. Forecasting must always be definite enough to keep operations for any period within the capacity of each section of the plant.

It is a general practice in refineries to have an inventory calculated each day on the basis of measurements taken about 7 a.m. It would be inadvisable to discontinue this practice without developing a substitute routine; but a substitute routine that gave genuine control of operations would cost much less than it would save in the long run and would make the effort of measuring tank and calculating contents immediately helpful in such control rather than a check on the operation of the previous 24 hours.

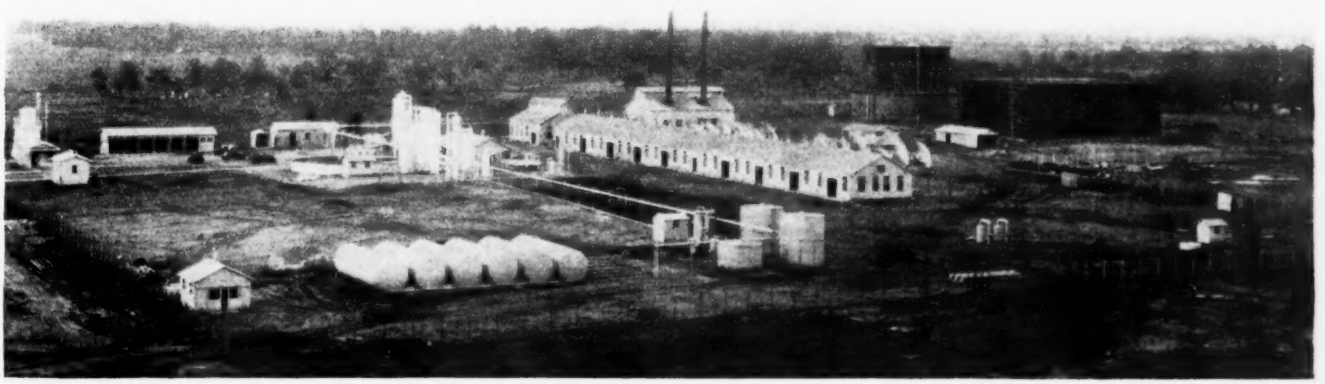
It is not unusual for refineries of considerable size to have no more formal method of control than the giving of orders by word of mouth or the assumption that such instructions will be carried out correctly. The detailed planning may even be done only in one man's mind. Even if his mind functions as accurately as it should, he is more subject to interruptions and distractions than is a formal routine that is carried on by subordinates. In the carrying out of verbal orders there is much more likelihood that instructions will be misunderstood or forgotten.

The larger and more complicated the plant is the greater is the benefit from formal production control. In the smallest and most simple plants it might even be advisable to do no more than place the responsibility on one individual and insist that he carry out his own system of control.

For production control in the refinery it is all important that a procedure be developed which is easy in operation. When it is easier to plan and execute successfully with written records than to plan and execute successfully without written records, the procedure may be considered a satisfactory one. Until then it should not be considered a successful installation.

On the basis of products required, the operation of the plant should be outlined for some days in advance. Consistent with the general plan, written operation orders should be issued for all major movements of stock and products, operations of stills and processing plants.

The proper combination of plant telephones, some operating clerks at the control point and others at important points in the plant should result in an increased flexibility in



Carter Oil Co.'s Stewart gasoline plant, Seminole field

Easy to Inspect and clean!

G-R Heat Exchangers

EACH type of G-R Heat Exchanger is designed with provision for easy inspection and cleaning. In G-R shell-and-tube exchangers, the heads are removable without disturbing pipe connections, and the tube bundles are readily withdrawn. In the new G-R Tubeflo Section for use with dirty or corrosive oils, removable semi-steel cover plates and bonnets give access to the straight smooth cored passages.

This feature is only one of the many advantages of G-R Heat Exchangers that have made them widely popular in every refinery service.

Note these other features of G-R Heat Exchangers

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Low pressure loss.
Flexible capacity.
High salvage value.
High heat transfer rates.

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operation and genuine control at a minimum expense.

Even when operation orders must be given verbally, or over the telephone, there is no reason why such orders should not be transmitted promptly to the control point and handled as a part of the control system.

An ideal operation order is one that carries pertinent information to the operating men, reduces their clerical effort to the minimum and can be utilized by the operating force in making their report of operations, both currently and when the work is completed.

Production control is essentially nothing but the codifying of various steps which must be taken in any event. It is not an end of itself. It must justify its existence by its economy in actual performance of those steps. It is sometimes difficult to show that it is an economy to set up a separate group of individuals to perform certain operations that appear purely clerical; but a close analysis will show that there has previously been performed an equal quantity of work, but by less skilled persons and with many omissions that ultimately had to be supplied at considerable expense.

Production control when once installed will almost invariably lead to more elaborate production control. It will become apparent that certain operating oversights are so expensive that the extension of control is a positive economy. In due time it will be discovered that these particular oversights are comparatively negligible and the cost of the clerical routine burdensome. An adjustment will then be in order.

The work done by individuals on work of this character, largely clerical in its performance, will require constant review and revision so that essentials shall be adequately taken care of and the routine reduced to the mimium consistent with good current operation. What seems the most important fact developed today may be comparatively unimportant in a short time because of an operating perfection which is today not even anticipated.

D. Dale Condit, consulting geologist, has moved from Chevy Chase, Washington, D. C., to Bakersfield, California.

Wesley I. Gish has succeeded C. U. Daniels, resigned, as head of the Fort Worth divisional land and geological departments of the Sinclair Oil & Gas Co. Mr. Daniels will operate independently in north and west Texas.

Paul Madden, formerly at Jacksonville, east Texas, for the Republic Production Co., subsidiary of the American Republics Corp., Houston, has been placed in charge of land department activities at Shreveport.

INDEX TO ARTICLES

Selected Bibliography on Petroleum Technology

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.

National Petroleum News **747.**

"How Important Petroleum Tests Are Applied and What They Show"

National Petroleum News, July 18, 1928, pp. 26-28.

Second installment of booklet on "Application of Tests" put out by Committee D-2 of the American Society for Testing Materials to clarify in the minds of members of the oil industry the method of carrying out the principal tests on petroleum products and what these tests mean.

J. C. Chatfield **775.**

"Double Stabilizing Column Installed at New Roxana Plant in Logan County"

National Petroleum News, Apr. 18, 1928, pp. 54-57.

With a single column stabilizer it is difficult to reduce the propane content of finished natural gasoline below from 1 to 2 per cent. By the addition of a second column, propane can be eliminated entirely and the distillation recovery of Double A gasoline increased to about 97 per cent. In addition it is possible to produce liquefied petroleum gas in commercially pure fractions. Roxana Petroleum Corp. has installed a high pressure De Brey type double column stabilizer at its new plant near Marshall, which is described.

E. R. de Ong **801.**

"Petroleum Oil as a Carrier for Insecticides and as a Plant Stimulant"

Industrial & Engineering Chemistry, August, 1928, pp. 826-827.

Study of the action of oils on leaf surfaces has shown a high degree of penetration irrespective of viscosity, which affects the rate rather than the degree of penetration. Saturated solutions of Sudan III (a colloidal dye) in oil penetrate leaves readily while the same dye suspended in water does not penetrate the epidermis or even through the cellular structure of leaves with broken epidermis. The behavior of dye solutions in oil suggested that nicotine and other active insecticides could be added to the oil, carried into the body of the insect and thus increase the toxicity of the application. For such work the uncombined free nicotine should be used rather than nicotine sulfate such as Black Leaf 40.

Henry W. Ralph **749.**

"Accounting Methods for Refineries" Article 3

National Petroleum News, Aug. 22, 1928, pp. 27-28.

A manufacturing and selling flow chart should be made which gives adequate description of all raw materials, supplies and intermediate products as well as traces the individual product through each step until it passes out of the control of the organization.

A fundamental requirement for organization accounting is a scheme of reports and records covering the receipt and distribution of raw materials, supplies and products so that a definite proof can be made that these have all been accounted for. This must include an accurate opening and closing inventory, satisfactory and sufficient records of receipts, production, consumption and deliveries. This in turn involves a classification of all items of such scope that each item falls automatically into its proper place without confusion.

C. H. S. Edmonds **741.2**

"Tube-Still Distillation"

Journal Institution of Petroleum Technologists (London) June, 1928, pp. 388-401.

The author, who has had long experience with pipe still construction and operation in the United States, gives a detailed description of construction and operating methods of pipe stills using both the single flash and the step-up systems. Mr. Edmonds is London representative of the Foster-Wheeler Corp. of New York.

031.143

"Natural Gasoline Stabilizer Patents Held Invalid in Second Case"

National Petroleum News, May 16, pp. 22-24.

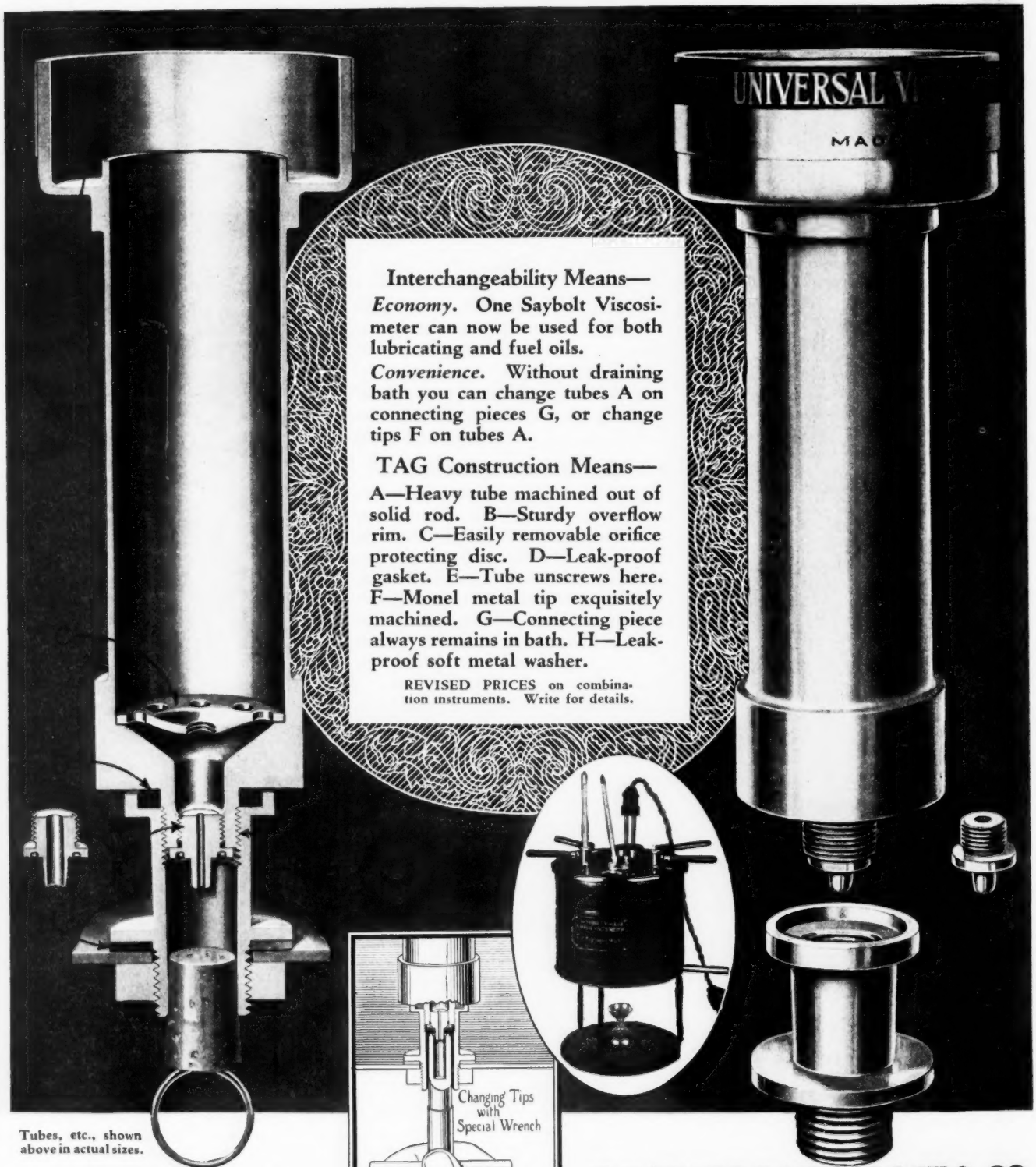
On May 12, 1928, Judge H. M. Morris of the U. S. District Court of Delaware at Wilmington, handed down a decision in the case of the Carbide and Carbon Chemicals Corp. vs. Phillips Petroleum Co. in which the former alleged infringements of its patents covering the Thompson and De Brey processes for rectifying natural gasoline. Text of the court's decision holding the patents invalid is given.

"Liquefied Gas for Domestic Use to Be Sold By Skelly" **807.**

National Petroleum News, May 9, 1928, p. 24.

Skelly Oil Co. has organized a separate division to market "Skelgas," a liquefied petroleum gas consisting largely of propane. The gas is to be bottled at natural gasoline plants in Oklahoma and Texas and shipped to domestic consuming centers. The company expects to market the product largely for cooking stoves where natural gas is not available.

SAYBOLT AND FUROL — ALL Now Fully Interchangeable — TUBES AND TIPS



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Gasoline Production Speeded Up Faster Than Demand Is Growing

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, Sept. 8

FOR the second consecutive month stocks of crude oil and above ground stocks of all petroleum and products decreased in July.

The decrease in crude oil stocks was 1,061,000 barrels. The decrease in stocks of all petroleum was 1,111,000 barrels. Total stocks of refined products increased 121,000 barrels, because of a gain in fuel oil stocks.

Natural gasoline stocks, which are not included in total refined stocks, fell 171,000 barrels, making a net decline of 50,000 barrels in stocks of finished goods.

At the July rate of demand for all oils, the 612,052,000 barrels of all oils on hand July 31 represented 213.5 days' supply. Stocks at the end of June were 219.3 days' supply and at the end of May 222.8 days' supply. Stocks on July 31, 1927, were 220.5 days' supply at the rate of demand then current, or one week's supply more than a year ago, although the volume was 50,000,000 barrels less than stocks this year.

Total daily average demand rose to 2,866,000 barrels in July or 36,000 barrels daily average more than the average new supply of oil. In July, 1927, the daily average new supply exceeded daily average demand by 243,000 barrels.

Daily average crude oil production of 2,443,000 barrels was 15,500 barrels a day more than the June average production.

Domestic gasoline demand rose above the million-barrel-a-day mark for the first time and, with a good export demand, stocks of motor fuel fell 4,001,000 barrels to 30,392,000 barrels July 31 or 25.3 days' supply at the July rate of demand. Stocks at the end of June were 30.5 days' supply at the June rate of demand and stocks at the end of July, 1927, were 36.7 days' supply at the rate of demand then current.

The Bureau of Mines report for July covers the operations of 334 refineries with a rated capacity of 3,166,000 barrels of crude throughput daily. These plants were being operated at 82 per cent capacity. The bureau's June report covered 326 refineries which were being operated at 81 per cent of their rated capacity.

Crude Oil

The increase of 15,500 barrels in daily average production of crude oil in July over the June average was due wholly to west Texas fields. Oklahoma production fell 17,300 barrels daily average to 617,500 barrels average and California production was down 1600 barrels daily to 637,200.

Inland Texas production which includes that of west Texas was 619,300 barrels average, a gain of 53,500 barrels over the June average. Production in the Panhandle district fell 2000 barrels average to 64,000 barrels and recovery in west Texas rose 49,000 barrels average. Production in five important districts in July and June compare, daily averages:

District	July	June
Seminole	262,000	277,000
Panhandle	64,000	66,000
West Texas	365,000	316,000
Seal Beach	34,000	37,000
Long Beach	196,000	194,000

Seminole continued its gradual decline but the increase in west Texas

Petroleum Supply and Demand — Barrels

	July 1928	*June 1928	May 1928	July 1927
Domestic crude production: Light	67,665,000	64,940,000	67,770,000	69,121,000
Heavy	7,761,000	7,586,000	7,448,000	9,659,000
Imports of crude oil	7,878,000	6,553,000	6,766,000	4,823,000
Imports of refined oil	781,000	712,000	702,000	1,053,000
Natural gasoline produced	3,409,000	3,317,000	3,474,000	3,119,000
Benzol used in blending	228,000	231,000	238,000	214,000
Total new supply of all oils	87,722,000	83,339,000	86,398,000	87,989,000
Total stocks end of preceding month	613,163,000	613,684,000	612,674,000	564,762,000
Total supply of all oils	700,885,000	697,023,000	699,072,000	652,751,000
Exports of crude oil	1,669,000	1,879,000	1,493,000	1,089,000
Exports of refined oil	12,769,000	12,284,000	13,915,000	10,080,000
Domestic demand, crude and refined	74,395,000	69,697,000	69,980,000	69,290,000
Total Demand	88,833,000	83,860,000	85,388,000	80,459,000
Total stocks of all oils end of month	612,052,000	613,163,000	613,684,000	572,292,000
Days' supply	213.5	219.3	222.8	220.5
Decrease in stocks	1,111,000	521,000	†1,010,000	†7,952,000
Daily average new supply	2,830,000	2,778,000	2,787,000	2,838,000
Daily average demand	2,866,000	2,795,000	2,754,000	2,595,000
Daily average defficiency of supply	36,000	17,000	‡33,000	‡243,000
Crude stocks:				
East of California: Light	318,004,000	319,267,000	320,382,000	276,871,000
Heavy	51,239,000	51,484,000	49,710,000	47,507,000
In California: Light	18,215,000	19,197,000	19,170,000	25,301,000
Heavy	95,663,000	94,234,000	93,941,000	93,011,000
Total stocks of crude	483,121,000	484,182,000	483,203,000	442,690,000
Total stocks of refined	128,454,000	128,333,000	127,915,000	128,610,000
Stocks of natural gasoline	477,000	648,000	809,000	992,000

*Revised †Increase ‡Excess.

Crude Production—Barrels

(Daily Averages)

States	July 1928	June 1928	July 1927
Arkansas	90,600	102,900	107,200
California	637,200	638,800	623,200
Colorado	8,000	7,500	7,800
Illinois	17,800	18,300	18,500
Indiana	2,800	2,900	2,300
Kansas	105,400	108,600	108,200
Kentucky	21,100	18,700	19,000
Louisiana: Inland	39,300	40,700	51,400
Gulf Coast	25,000	25,000	8,100
Michigan	1,800	1,700	1,200
Montana	9,400	10,000	15,000
New Mexico	2,900	2,200	2,800
New York	6,500	7,600	5,900
Ohio	19,900	20,800	20,200
Oklahoma	617,500	634,800	866,500
Pennsylvania	26,700	27,600	25,700
Tennessee	200	100	200
Texas: Inland	619,300	565,800	441,700
Gulf Coast	106,800	106,700	122,700
West Virginia	15,600	15,700	15,800
Wyoming	59,300	61,200	63,500
Total, U. S.	2,433,100	2,417,600	2,526,900

Crude Oil Production by Fields — Barrels

Fields	July Daily Avg.	June Daily Avg.	Jan.-July 1928 Total	Jan.-July 1927 Total	Changes 1928 from 1927
Appalachian	85,100	85,500	17,922,000	17,625,000	+ 1.68
Lima-Indiana	5,100	5,300	1,020,000	1,110,000	— 8.10
Michigan	1,800	1,700	280,000	256,000	+9.37
Ill.-S. W. Indiana	20,400	20,900	4,334,000	4,561,000	— 4.98
Mid-Continent	1,472,000	1,452,800	311,487,000	310,473,000	+ 0.33
Gulf Coast	131,800	131,700	26,104,000	31,230,000	—16.41
Rocky Mountain	79,600	80,900	16,852,000	18,584,000	— 9.32
California	637,200	638,800	132,715,000	135,615,000	— 2.14
U. S. Total	2,433,100	2,417,000	510,714,000	519,454,000	— 1.68

Daily Average Runs to Stills — All Oils — Barrels

	East Coast	Appala.	Ind.-Ill.	Okla.-Kans.	Texas	La.-Ark.	Rocky-Mt.	Calif.	Total U. S.	
January, 1927	408,355	82,581	206,226	278,258	517,160	228,516	103,161	616,516	2,440,774	January, 1927
February	412,714	86,928	197,785	295,964	504,642	228,107	103,321	633,108	2,462,571	February
March	439,387	83,097	209,161	283,548	479,806	224,903	103,290	597,839	2,421,032	March
April	411,367	84,400	204,067	286,067	491,567	224,400	100,500	615,333	2,417,701	April
May	413,516	82,000	226,677	293,581	494,806	212,129	75,839	618,452	2,417,000	May
June	429,967	85,400	238,067	301,733	490,633	199,933	87,300	605,733	2,438,766	June
July	439,871	80,935	250,387	317,129	482,839	199,194	87,226	633,032	2,490,613	July
August	465,839	86,065	237,194	319,516	481,032	202,226	76,032	618,516	2,486,420	August
September	453,000	87,100	225,667	327,300	483,900	211,600	71,700	637,467	2,497,733	September
October	475,580	91,161	229,677	307,774	513,419	204,968	80,871	617,937	2,521,387	October
November	471,667	84,200	246,100	298,667	515,533	197,900	89,800	619,733	2,523,600	November
December	467,226	83,484	250,516	292,355	494,806	199,226	87,354	592,710	2,467,677	December
January, 1928	450,064	84,613	247,097	288,645	482,613	202,064	85,935	570,161	2,411,193	January, 1928
February	461,448	86,680	250,793	296,482	510,586	201,518	83,207	587,690	2,478,413	February
March	455,807	88,548	268,000	304,032	523,548	203,839	89,064	593,968	2,526,806	March
April	499,866	92,933	272,900	319,200	533,967	218,233	93,433	599,300	2,629,833	April
May	502,613	98,322	296,290	331,903	540,613	237,290	101,774	584,032	2,692,839	May
June	534,467	101,233	310,767	330,666	532,233	216,900	96,867	625,833	2,748,967	June
July	528,774	102,065	313,742	338,646	567,967	212,258	97,935	639,484	2,800,871	July

offset it threefold. Initial production in the west Texas pools continued high, the 99 oil wells completed during the month averaging 7500 barrels initial each. In the two California pools covered in the foregoing table the average initial was 1400 barrels. The 34 wells completed in Seminole district averaged only 600 barrels each and the 19 wells in the Panhandle 100 barrels each.

Average production in Arkansas in July was 90,600 barrels, a decline of 12,300 barrels from the June average which included the peak of the Rainbow pool flare. Kentucky production increased 2400 barrels average but in other states the variations from June averages were less than 2000 barrels.

Gulf Coastal production was virtually unchanged in July from June but with the exception of the Mid-Continent every other important field averaged less production than it did in June.

Total production in the first seven months of 1928 was larger than in the first seven months of 1927 in only the Appalachian, Michigan and Mid-Continent fields.

The increase in the Mid-Continent was only a third of 1 per cent. The daily average production in the seven months this year in the Mid-Continent was 1,462,300 barrels or 1000 barrels daily average less than production last year.

Although the percentage of increase in Michigan was high the volume of the oil was little. The increase in the Appalachian field also was small but for the first time since the Salt Creek field, Wyoming, came to the fore the total production in the old Appalachian field exceeded that of the Rocky Mountain field. The largest decline in production this year has been in the Gulf Coastal fields where production has been 5,126,000 barrels or 16.41 per cent less than in the first seven months of 1927. Last year's higher production was caused by the Spindletop development. The second largest decline this year was in California, 2,900,000 barrels or 2.14 per cent.

Imports of crude oil were larger in July than in June, the gain coming from receipts from South America. Daily average receipts of crude oil and sources in July and June compare:

Origin	July	June
Mexico	48,200	56,800
Venezuela	155,100	124,200
Colombia	41,000	29,300
Other countries	9,800	8,100
Total	254,100	218,400

Imports of crude in the first seven months were almost 50 per cent larger this year than last. A comparison of total imports for the two seven-month periods with countries of origin follow:

Origin	1928	1927
Mexico	9,842,000	15,716,000
Venezuela	26,757,000	9,067,000
Colombia	7,635,000	4,218,000
Other countries	1,650,000	1,817,000
Total	45,884,000	30,818,000

Exports at 53,800 barrels average in July were 8800 barrels average less than June exports of crude. Exports in the first seven months of 1928 totaled 10,343,000 barrels, compared with 8,268,000 barrels in the same period of 1927.

Shipments of California crude oil to eastern ports of the United States at 242,000 barrels total in July was an increase of 60,000 barrels over June shipments. In seven months these shipments totaled 1,891,000 barrels this year and 5,967,000 barrels last year.

For the third consecutive month stocks of crude oil were lowered east of California and for the third consecutive month California stocks were increased. Light California crude oil stocks were lowered a little, but supplies of heavy crude increased more than 1,000,000 barrels.

East of California the decline in crude oil stocks was 1,508,000 barrels, virtually all of which was in the Mid-Continent. Stocks of both light and heavy crudes were reduced but the larger reduction was in light crudes.

Producers' stocks of crude oil at Seminole rose 7000 barrels to 371,000 barrels but tank farm stocks there fell 613,000 barrels to 17,018,000 barrels.

Runs to Stills

Charges of all oils to stills set a new record at 2,800,871 barrels daily average in July. This average was 51,904 barrels more than the

Crude Oil Stocks — By Months

(Thousands of Barrels)

1927	East of Calif.	†In Calif.	Total U. S.
January	278,972	118,988	397,673
February	285,458	117,410	402,868
March	290,110	117,454	407,564
April	297,895	117,843	415,738
May	307,016	117,432	424,448
June	315,702	117,414	433,116
July	324,930	116,996	441,926
August	333,673	115,227	448,900
September	339,741	114,981	454,722
October	345,357	113,467	458,824
November	348,885	113,746	462,631
December	351,646	111,855	463,501
1928			
January	358,892	114,820	473,712
February	362,963	114,907	477,870
March	368,744	114,117	482,861
April	371,579	113,053	484,632
May	371,561	113,111	484,662
June	370,751	113,431	484,182
July	369,243	113,878	483,121

†Includes heavy fuels.

Stocks of Crude Oil

Domestic Unless Otherwise Specified. Amounts in Thousands of Barrels

AT REFINERIES

Districts	July 1928	June 1928	July 1927
East Coast:			
Domestic	8,698	8,328	8,999
Foreign	5,203	5,482	2,671
Appalachian	2,186	2,242	1,785
Indiana, Illinois, etc.	3,053	2,957	2,561
Oklahoma, Kansas, etc.	5,688	5,662	4,428
Texas Inland	1,863	1,927	1,456
Texas Gulf Coast:			
Domestic	8,152	8,469	6,657
Foreign	150	102	226
Ark. and Inland La.	840	881	454
Louisiana Gulf Coast:			
Domestic	4,462	4,149	4,559
Foreign	1,194	970	1,373
Rocky Mountain	1,440	1,488	1,382
U. S. East of Calif.	42,929	42,657	36,545

AT TANK FARMS, IN PIPE LINES AND ELSEWHERE THAN REFINERIES

Appalachian	5,942	6,064	6,883
Kentucky	1,139	1,087	1,199
Lima-Indiana	1,333	1,267	899
Ill., S. W. Indiana	12,049	12,200	12,184
Okla., Kans., Tex., except Coastal	235,083	236,725	193,217
N. La.-Ark.	26,502	26,543	27,791
Gulf Coast	17,235	17,028	17,985
Rocky Mountain	26,949	27,038	27,377
East of Calif. pipe line, tank farm stocks	326,232	327,952	287,535
Foreign Crude:			
Atlantic Ports	40	91	42
Gulf Ports	42	51	256
Total refinery, pipe line and tank farm stocks east of Calif.	369,243	370,751	324,378
California:			
20° and lighter	18,215	19,197	25,301
Heavier than 20°	95,663	94,234	93,011
Grand total	473,121	484,182	442,690

CLASSIFICATION BY GRAVITY

Elsewhere than at refineries east of California

24° and lighter	318,004	319,267	276,871
Heavier than 24°	51,239	51,484	47,507

The practice of storing excessive stocks of fuel oil on tank farms waiting for some favorable time to sell it as fuel, is speedily producing within the industry a real "farm relief" problem

The best remedial measure is the Dubbs Cracking Process with Flashing System because with it you can convert all of the fuel oil into premium gasoline and some premium fuel oil—or if you want to—all into premium gasoline and coke

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Gasoline Situation by Districts — Barrels

Districts	July Daily Avg. Output	June Daily Avg. Output	July Change %	July Daily Avg. Shipments	June Daily Avg. Shipments	July Change %	Stocks July 1928	Stocks June 1928	Stocks July 1927	Districts
East Coast	150,903	146,167	+ 3.24	176,581	168,133	+ 5.02	4,857,000	5,653,000	6,615,000	East Coast
Appalachian	45,613	45,533	+ 0.17	49,226	46,333	+ 6.24	1,021,000	1,133,000	833,000	Appalachian
Ind., Ill., etc.	163,322	152,667	+ 6.98	181,903	164,367	+10.67	4,103,000	4,679,000	4,664,000	Ind., Ill., etc.
Okla., Kans., etc.	173,548	166,433	+ 4.27	198,355	182,500	+ 8.69	2,190,000	2,959,000	3,158,000	Okla., Kans. etc.
Texas	223,064	212,000	+ 5.22	232,548	257,967	— 9.85	4,273,000	4,567,000	5,829,000	Texas
La. & Ark.	71,451	68,367	+ 4.51	78,322	74,033	+ 5.79	1,035,000	1,248,000	2,162,000	La. & Ark.
Rocky Mount.	46,097	45,700	+ 0.87	53,161	50,533	+ 5.20	1,694,000	1,913,000	3,970,000	Rocky Mount.
California	186,774	185,633	+ 0.61	219,742	176,734	+24.33	11,219,000	12,241,000	11,838,000	California
U. S. Total	1,060,772	1,022,500	+ 3.74	1,189,838	1,120,600	+ 6.18	30,392,000	34,393,000	39,069,000	U. S. Total
Texas Gulf Coast	168,581	162,533	+ 3.72	175,677	206,967	—15.11	3,663,000	3,883,000	5,107,000	Texas Gulf Coast
La. Gulf Coast	54,290	51,033	+ 6.38	61,193	55,934	+ 9.40	966,000	1,180,000	2,050,000	La. Gulf Coast

Natural Gasoline and Motor Blends — Barrels

Districts	Daily Avg. Production July (net)	Daily Avg. Production June (net)	Stocks End of July	Stocks End of June	Motor Fuel Blends Made in July	Motor Fuel Blends Made in June	Stocks of Blends End of July	Stocks of Blends End of June	Districts
Appalachian	4,224	4,921	45,548	74,285	8,642	9,357	6,071	7,666	Appalachian
Ind., Ill., etc.	691	794	7,238	7,309	1,095	1,143	381	476	Ind., Ill., etc.
Okla., Kans., etc.	39,401	39,524	249,500	319,738	118,048	109,976	15,881	16,071	Okla., Kans., etc.
Texas	20,123	20,555	104,238	174,476	15,952	18,238	3,310	2,929	Texas
Louisiana and Ark.	5,607	5,634	23,881	27,381	11,834	10,786	524	644	Louisiana and Ark.
Rocky Mountain	2,765	3,016	15,071	12,429	.....	.....	119	190	Rocky Mountain
Total East of Calif.	72,811	74,444	445,476	615,618	155,571	149,500	26,286	27,976	Total east of Calif.
California	37,173	36,111	31,762	32,048	Not Available	Not Available	71	72	California
U. S. Total	109,984	110,555	477,238	647,666	155,571	149,500	26,357	28,048	U. S. Total

previous record established in June.

The average July runs consisted of approximately 2,368,000 barrels of domestic crude, 234,400 barrels of foreign crude, 107,300 barrels of unfinished oils, and 90,400 barrels of natural gasoline. This was an increase of 80,200 barrels average in domestic crude, 300 in foreign crude and a decrease of 28,000 barrels of unfinished oils and 600 of natural gasoline.

Only the Louisiana-Arkansas and East Coast plants lowered their throughput. Runs in other districts except the Rocky Mountain were at record height. Runs were larger than runs in July, 1927, in all but the Rocky Mountain district.

Gasoline

Production of gasoline at refineries reached the record average of 1,060,772 barrels daily. This average volume exceeded the June average by 38,272 barrels. Imports in July averaged 9000 barrels daily, making the total new supply 1,069,772 barrels daily.

Shipments of gasoline to domestic distributors averaged 1,032,000 barrels daily, the first time domestic demand has ever exceeded 1,000,000 barrels a day. Exports were large, averaging 167,000 barrels daily, but were below the record level of May of 216,500 barrels daily. Total demand in July averaged 1,199,000 barrels daily, the result being draft of almost 129,000 barrels daily on stocks to meet the demand.

Total draft on stocks amounted to 4,001,000 barrels and the reserves of 30,392,000 barrels were the lowest since last October, representing only 25.3 days' supply at the July rate of demand, possibly the smallest relative supply since 1922 and with three large consuming months ahead of the date on which these figures on supply were taken.

Average production of gasoline was larger in July than in June in every refining district although the increases in the Appalachian, Rocky Mountain and California districts were less than 1 per cent. Shipments were larger from every district except Gulf Coastal Texas. Stocks were drawn on in every district. Stocks July 31 were smaller than stocks July 31, 1927, in all but the Appalachian district.

Although runs of unfinished oils were smaller in July than in June the relative volume of cracked gasoline produced was larger, making up 32 per cent of the volume produced as against 31 per cent in June. July output of straight run gasoline was 59 per cent compared with 60 per cent in June. Relative volume of natural gasoline used was unchanged at 9 per cent of the output of gasoline by refineries.

In the first seven months of 1928 59 per cent of the gasoline produced was straight run, 32 per cent cracked and 9 per cent natural gasoline, the same proportions as the July production.

The following summary shows the gasoline situation in the first seven months of 1928 in comparison with the situation in the like period of 1927:

1. Domestic production increased 18,647,000 barrels to 207,615,000 barrels or 9.9 per cent.

2. Imports decreased 564,000 barrels to 2,512,000 barrels or 18.3 per cent.

3. Total new supply rose 18,083,000 barrels to 210,127,000 barrels or 9.4 per cent.

4. Domestic demand rose 13,883,000 barrels to 180,190,000 barrels or 8.3 per cent.

5. Export demand rose 6,995,000 barrels to 31,868,000 barrels or 27 per cent.

6. Total demand increased 19,878,000 barrels to 212,058,000 barrels or 10.3 per cent.

7. Stocks July 31 were 8,677,000 barrels or 22.2 per cent less than stocks a year before.

Gasoline Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	27,960,000	520,000	3,557,000	17,888,000	46,058,000
February	25,024,000	416,000	3,544,000	18,240,000	49,714,000
March	27,886,000	493,000	3,219,000	22,646,000	52,410,000
April	26,577,000	377,000	3,614,000	23,371,000	52,379,000
May	26,787,000	490,000	4,468,000	26,579,000	48,609,000
June	26,616,000	590,000	4,248,000	27,799,000	43,768,000
July	28,118,000	190,000	3,223,000	29,784,000	39,069,000
Total Seven Months	188,968,000	3,076,000	25,873,000	166,307,000	39,069,000
August	28,010,000	348,000	4,193,000	29,779,000	33,455,000
September	27,716,000	515,000	3,539,000	28,409,000	29,738,000
October	28,903,000	365,000	3,959,000	25,497,000	29,550,000
November	28,558,000	417,000	3,724,000	24,400,000	30,401,000
December	28,512,000	282,000	3,154,000	23,718,000	32,323,000
1927 Total	330,667,000	5,003,000	44,442,000	297,928,000	.....
January, 1928	27,879,000	562,000	3,713,000	20,939,000	36,112,000
February	26,775,000	372,000	3,341,000	21,136,000	38,782,000
March	29,245,000	259,000	4,016,000	24,041,000	40,229,000
April	29,332,000	472,000	4,111,000	25,712,000	40,210,000
May	30,825,000	368,000	6,712,000	27,355,000	37,336,000
June	30,675,000	212,000	4,808,000	29,022,000	34,393,000
July	32,884,000	267,000	5,167,000	31,985,000	30,392,000
Total Seven Months	207,615,000	2,512,000	31,868,000	180,190,000	30,392,000

Natural Gasoline

Production of natural gasoline in July was 1633 barrels daily average less east of California and was 1062 barrels daily average more in Cali-

fornia, making a net decrease of 571 barrels daily for the country.

Stocks decreased approximately 170,000 barrels east of California and were lowered a few hundred barrels in California.

Output of blended motor fuels was larger in July but stocks were lowered almost 1700 barrels.

Kerosene

Kerosene production averaged slightly less in July than in June although the total output was a little more. Imports were still under 1000 barrels daily average. Average domestic and foreign demand was larger.

Daily average kerosene output was a third of 1 per cent less in the whole country. Four of the eight districts increased their production and four curtailed output. Shipments increased from the East Coast, Oklahoma-Kansas, Texas, Louisiana-Arkansas and California districts. For the whole country average shipments were 17.93 per cent larger than June shipments.

Stocks of kerosene were lowered in the East Coast, Texas, Rocky Mountain and California districts, but stocks in the whole country increased 100,000 barrels. Stocks July 31 were lower than sotcks a year before in the East Coast, Oklahoma-Kansas, Texas, Louisiana-Arkansas, Rocky Mountain and California districts.

The following summary shows the kerosene situation in the first seven months of 1928 in comparison with the situation in the like period of 1927.

1. Domestic output was 2,235,000 barrels or 6.9 per cent more.
2. Imports were 119,000 barrels or 1480 per cent more.
3. Total new supply was 2,254,000 barrels or 7.3 per cent more.
4. Domestic shipments were 343,000 barrels or 1.6 per cent less.
5. Exports were 2,359,000 barrels or 21.7 per cent more.
6. Total demand was 2,016,000 barrels or 6.3 per cent more.
7. Stocks July 31 were 568,000 barrels or 6.7 per cent more than stocks July 31, 1927.

Lubricants

Daily average output of lubricating oils was curtailed 9.08 per cent to 91,194 barrels in July. Shipments fell 10.55 per cent but stocks were lowered 165,000 barrels to 7,667,000 barrels.

Output was curtailed in all but the Louisiana Gulf Coast plants. July shipments were larger than June shipments from the Appalachian, Oklahoma-Kansas and Louisiana Gulf Coast districts. Stocks were increased slightly in the Appalachian, Rocky Mountain and California districts. Stocks July 31 were larger than a year before at all but the East Coast plants.

The following summary compares

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Kerosene Situation by Districts — Barrels

Districts	July Daily Avg. Output	June Daily Avg. Output	July Change %	July Daily Avg. Shipments	June Daily Avg. Shipments	July Change %	Stocks July 1928	Stocks June 1928	Stocks July 1927	Districts
East Coast	22,742	21,467	+ 5.94	26,226	24,500	+ 7.04	1,418,000	1,526,000	1,789,000	East Coast
Appalachian	11,032	11,267	— 2.09	9,387	9,600	— 2.22	345,000	294,000	336,000	Appalachian
Ind., Ill., etc.	17,677	19,167	— 7.77	10,903	13,733	—20.61	1,146,000	936,000	919,000	Ind., Ill., etc.
Okla., Kans., etc.	27,129	28,067	— 3.34	26,581	24,133	+10.14	620,000	603,000	642,000	Okla., Kans. etc.
Texas	38,710	37,733	+ 2.59	42,967	29,300	+46.64	1,363,000	1,495,000	1,710,000	Texas
La. & Ark.	17,000	15,533	+ 9.44	13,032	14,600	+10.74	1,676,000	1,553,000	1,396,000	La. & Ark.
Rocky Mount.	4,226	5,632	—24.96	4,322	4,300	— 0.51	284,000	287,000	322,000	Rocky Mount.
California	22,581	21,767	+ 3.74	24,451	13,700	+78.47	1,618,000	1,676,000	1,924,000	California
U. S. Total	161,097	161,633	— 0.33	157,869	133,866	+17.93	8,470,000	8,370,000	9,038,000	U. S. Total
Texas Gulf Coast	30,322	30,932	— 1.97	35,387	22,000	+60.85	1,273,000	1,430,000	1,332,000	Texas Gulf Coast
La. Gulf Coast	15,064	14,600	+ 3.18	10,935	12,600	—13.21	1,656,000	1,528,000	1,357,000	La. Gulf Coast

Lubricant Situation by Districts — Barrels

Districts	July Daily Avg. Output	June Daily Avg. Output	July Change %	July Daily Avg. Shipments	June Daily Avg. Shipments	July Change %	Stocks July 1928	Stocks June 1928	Stocks July 1927	Districts
East Coast	26,484	30,367	—12.79	29,000	36,233	—27.57	2,598,000	2,676,000	2,553,000	East Coast
Appalachian	14,677	15,333	— 4.28	14,193	13,933	+ 1.87	1,150,000	1,135,000	952,000	Appalachian
Ind., Ill., etc.	10,355	12,300	—15.81	11,450	13,133	—12.81	756,000	790,000	675,000	Ind., Ill., etc.
Okla., Kans., etc.	6,903	6,933	— 0.44	7,935	7,767	+ 2.16	487,000	519,000	413,000	Okla., Kans. etc.
Texas	21,903	25,633	—14.55	22,871	27,500	—16.83	1,642,000	1,672,000	1,796,000	Texas
La. & Ark.	2,904	1,400	+107.42	3,322	1,200	+176.83	118,000	131,000	108,000	La. & Ark.
Rocky Mount.	1,484	1,834	—19.08	1,451	1,567	— 7.40	140,000	139,000	122,000	Rocky Mount.
California	6,484	6,500	— 0.25	6,290	6,567	— 4.22	776,000	770,000	877,000	California
U. S. Total	91,194	100,300	— 9.08	96,512	107,900	—10.55	7,667,000	7,832,000	7,496,000	U. S. Total
Texas Gulf Coast	20,839	24,367	—14.48	21,935	26,300	—16.59	1,555,000	1,589,000	1,753,000	Texas Gulf Coast
La. Gulf Coast	2,774	1,333	+108.10	3,161	1,233	+156.36	114,000	126,000	108,000	La. Gulf Coast

the lubricant situation in the first seven months of 1928 with that in the like period of 1927:

1. Domestic production was 2,092,000 barrels or 11.5 per cent more.
2. Imports were 5000 barrels in 1927 and none in 1928.
3. Total new supply was 2,087,000 barrels or 11.5 per cent more.
4. Domestic demand was 842,000 barrels or 6.6 per cent more.
5. Exports were 1,136,000 barrels or 19.7 per cent more.
6. Total demand was 1,978,000 barrels or 10.7 per cent more.
7. Stocks July 31 were 171,000 barrels or 2.3 per cent more than stocks July 31, 1927.

Paraffin Wax

Production of paraffin wax in July was the smallest since August, 1927. Imports were larger than June imports but smaller than imports in April. Domestic demand receded a third but foreign demand increased to the largest figure since March. Stocks were reduced more than 7,500,000 pounds. Stocks at the end of July were at the lowest point they have been since the bureau began to compile wax statistics in 1917.

The following summary gives a comparison of changes in the wax situation in the first seven months of 1928 over the first seven months of 1927:

1. Domestic production increased 16,552,000 pounds or 4.8 per cent.
2. Imports increased 4,172,000 pounds or 47.2 per cent.
3. Total new supply increased 20,724,000 pounds or 5.9 per cent.
4. Domestic demand increased 19,-

Gas and Fuel Oil Situation by Districts — Barrels

Districts	July Daily Avg. Output	June Daily Avg. Output	July Change %	July Daily Avg. Shipments	June Daily Avg. Shipments	July Change %	Stocks July 1928	Stocks June 1928	Stocks July 1927	Districts
East Coast	267,322	274,400	— 2.58	301,516	248,433	+21.37	8,669,000	9,729,000	8,917,000	East Coast
Appalachian	19,484	18,367	+ 6.08	18,226	18,033	+ 1.07	1,068,000	1,029,000	896,000	Appalachian
Ind., Ill., etc.	95,355	94,200	+ 1.23	89,096	78,800	+13.07	2,689,000	2,495,000	1,545,000	Ind., Ill., etc.
Okla., Kans., etc.	104,645	105,033	— 0.36	87,742	90,300	— 2.83	6,196,000	5,672,000	5,241,000	Okla., Kans. etc.
Texas	236,064	218,933	+ 7.82	174,484	173,900	+ 0.34	12,383,000	10,474,000	10,372,000	Texas
La. & Ark.	73,839	85,000	—13.13	83,322	86,067	— 3.19	5,131,000	5,425,000	3,272,000	La. & Ark.
Rocky Mount.	18,581	18,600	— 0.10	15,903	14,733	+ 7.94	1,274,000	1,191,000	647,000	Rocky Mount.
California	376,355	370,967	+ 1.45	.....	.....	.....	.....	.....	.....	California
U. S. Total	1,191,645	1,185,500	+ 0.52	1,146,645	1,081,233	+ 6.05	37,410,000	36,015,000	28,890,000	U. S. Total
Texas Gulf Coast	161,742	154,533	+ 4.67	116,226	116,400	— 0.15	9,924,000	8,513,000	6,790,000	Texas Gulf Coast
La. Gulf Coast	32,871	46,833	—29.81	43,000	45,000	— 4.44	4,338,000	4,652,000	2,672,000	La. Gulf Coast

Coke, Asphalt, Miscellaneous Products

	Coke Output (Tons)	Coke Stocks (Tons)	Asphalt Output (Tons)	Asphalt Stocks (Tons)	Miscel. Products Output (Bbls.)	Miscel. Products Stocks (Bbls.)	Unfin. Oil Output (Bbls.)	Unfin. Oil Stocks (Bbls.)	Losses (Bbls.)	
January, 1927	92,914	287,394	191,180	215,337	511,000	1,189,000	2,473,000	39,287,000	2,367,000	January, 1927
February	88,102	294,682	172,685	234,450	546,000	1,282,000	2,729,000	38,986,000	2,091,000	February
March	98,163	325,521	222,309	235,251	525,000	1,356,000	2,412,000	39,392,000	2,369,000	March
April	88,404	318,529	273,767	219,502	561,000	1,410,000	1,978,000	38,095,000	2,237,000	April
May	87,900	329,400	319,000	222,500	599,000	1,368,000	1,809,000	37,760,000	2,599,000	May
June	95,300	293,100	347,100	232,400	677,000	1,180,000	2,283,000	38,192,000	2,487,000	June
July	90,400	305,800	334,700	214,100	747,000	928,000	2,490,000	39,647,000	2,516,000	July
August	94,800	303,600	339,500	192,200	743,000	879,000	1,955,000	38,711,000	2,598,000	August
September	97,500	313,500	333,100	176,300	634,000	863,000	1,811,000	36,962,000	2,453,000	September
October	101,600	331,300	332,600	189,400	663,000	960,000	1,977,000	35,874,000	2,405,000	October
November	102,300	349,200	290,000	196,200	606,000	1,120,000	2,121,000	35,209,000	2,145,000	November
December	107,800	345,100	262,600	220,800	593,000	1,221,000	2,435,000	35,314,000	2,062,000	December
1927 Total	1,145,183	.....	3,418,541	.....	7,405,000	.....	26,473,000	.....	28,329,000	1927 Total
January, 1928	103,000	330,400	198,900	209,300	613,000	1,176,000	2,297,000	35,843,000	2,128,000	January, 1928
February	100,000	337,000	208,500	230,300	635,000	1,297,000	2,198,000	36,030,000	1,969,000	February
March	107,200	352,400	270,000	268,700	661,000	1,527,000	2,247,000	35,601,000	2,258,000	March
April	109,400	342,100	273,900	273,700	656,000	1,601,000	2,475,000	36,463,000	2,223,000	April
May	118,400	348,300	330,700	262,200	879,000	1,392,000	2,792,000	37,073,000	2,398,000	May
June	118,100	343,700	331,600	270,800	892,000	1,130,000	2,307,000	36,999,000	2,547,000	June
July	127,000	384,900	329,400	251,400	929,000	1,200,000	2,811,000	39,647,000	2,806,000	July

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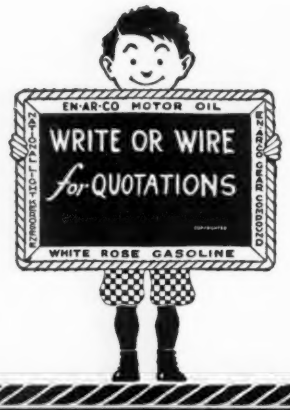

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Lubricating Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	2,570,000	1,000	864,000	1,496,000	7,867,000
February	2,345,000	.....	620,000	1,231,000	8,361,000
March	2,754,000	1,000	895,000	2,334,000	8,035,000
April	2,615,000	1,000	763,000	1,712,000	8,176,000
May	2,625,000	1,000	863,000	1,928,000	8,011,000
June	2,571,000	1,000	758,000	2,197,000	7,628,000
July	2,672,000	.....	993,000	1,811,000	7,496,000
Total Seven Months	18,152,000	5,000	5,756,000	12,709,000	7,496,000
August	2,752,000	1,000	754,000	2,004,000	7,491,000
September	2,782,000	.....	861,000	1,965,000	7,447,000
October	2,757,000	1,000	839,000	1,782,000	7,584,000
November	2,477,000	.....	798,000	1,739,000	7,524,000
December	2,801,000	.....	802,000	1,663,000	7,860,000
1927 Total	31,721,000	7,000	9,810,000	21,634,000	.....
January, 1928	2,658,000	.....	934,000	1,606,000	7,978,000
February	2,728,000	.....	841,000	1,533,000	8,332,000
March	2,905,000	.....	837,000	1,988,000	8,412,000
April	3,026,000	.....	1,059,000	2,362,000	8,018,000
May	3,091,000	.....	1,063,000	1,989,000	8,060,000
June	3,009,000	.....	1,095,000	2,143,000	7,832,000
July	2,827,000	.....	1,063,000	1,930,000	7,667,000
Total Seven Months	20,244,000	.....	6,892,000	13,551,000	7,667,000

Gas and Fuel Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	32,936,000	660,000	3,732,000	.....	*23,195,000
February	30,185,000	1,053,000	3,812,000	.....	*22,099,000
March	32,377,000	525,000	3,657,000	.....	*22,561,000
April	31,856,000	805,000	3,325,000	.....	*23,732,000
May	33,499,000	826,000	4,544,000	.....	*26,059,000
June	31,691,000	851,000	4,278,000	.....	*26,590,000
July	33,693,000	849,000	4,047,000	.....	*28,890,000
Total Seven Months	226,237,000	5,569,000	27,395,000	.....	*28,890,000
August	34,098,000	391,000	4,639,000	.....	*30,346,000
September	32,339,000	341,000	3,258,000	.....	*31,631,000
October	34,045,000	667,000	4,206,000	.....	*33,191,000
November	32,594,000	704,000	4,013,000	.....	*33,637,000
December	33,029,000	451,000	3,828,000	.....	*31,982,000
1927 Total	392,342,000	8,123,000	47,339,000	.....	.....
January, 1928	32,271,000	553,000	4,175,000	.....	*29,623,000
February	30,944,000	666,000	3,420,000	.....	*29,011,000
March	34,071,000	848,000	3,969,000	.....	*29,170,000
April	33,857,000	1,176,000	4,211,000	.....	*29,499,000
May	35,620,000	323,000	3,612,000	.....	*32,887,000
June	35,565,000	468,000	4,238,000	.....	*36,015,000
July	36,941,000	484,000	4,261,000	.....	*37,410,000
Total Seven Months	239,269,000	4,518,000	27,886,000	.....	*37,410,000

*These stocks for east of California only.

244,000 pounds or 11.7 per cent.

5. Export demand increased 73,852,000 pounds or 40.6 per cent.

6. Total demand increased 93,096,000 pounds or 26.9 per cent.

7. Stocks July 31, 1928, were 107,025,000 pounds or 55.8 per cent less than stocks July 31, 1927.

Gas and Fuel Oils

The record runs to stills resulted in record production of fuel and gas oils, daily average output increasing 0.52 per cent over the June output, the previous record production. However, output of these oils was less in the East Coast, Oklahoma-Kansas, Louisiana-Arkansas and Rocky Mountain districts than in June.

East of California daily average shipments were 6.05 per cent larger than average June shipments, every district except Oklahoma-Kansas and Louisiana-Arkansas shipping more oil than they did in June. Stocks were

Paraffin Wax Supply and Demand — Pounds

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	54,114,000	460,000	29,228,000	17,842,000	192,835,000
February	47,363,000	2,048,000	23,623,000	20,171,000	198,452,000
March	53,644,000	910,000	28,205,000	23,461,000	201,340,000
April	48,917 000	1,505,000	25,421,000	15,322,000	211,019,000
May	46,267,000	729,000	25,228,000	25,458,000	207,329,000
June	44,938,000	400,000	24,200,000	29,659,000	198,808,000
July	47,979,000	2,789,000	25,970,000	32,105,000	191,501,000
Total Seven Months	343,222,000	8,841,000	181,875,000	164,008,000	191,501,000
August	41,576,000	2,656,000	34,229,000	20,859,000	180,645,000
September	47,888,000	3,040,000	31,780,000	29,621,000	170,172,000
October	49,476,000	887,000	28,342,000	21,826,000	170,367,000
November	48,146,000	3,132,000	32,541,000	17,404,000	171,700,000
December	54,039,000	1,906,000	30,569,000	29,862,000	150,638,000
1927 Total	584,347,000	20,462,000	339,336,000	283,590,000	.....
January, 1928	55,320,000	1,117,000	39,712,000	16,878,000	150,485,000
February	49,724,000	1,337,000	38,036,000	13,477,000	150,033,000
March	50,207,000	1,767,000	40,147,000	41,060,000	120,800,000
April	57,548,000	2,996,000	34,122,000	37,212,000	110,010,000
May	51,072,000	1,855,000	34,826,000	24,472,000	103,639,000
June	50,792,000	1,715,000	33,594,000	30,563,000	91,989,000
July	45,273,000	2,226,000	35,290,000	19,722,000	84,476,000
Total Seven Months	359,774,000	13,013,000	255,727,000	183,252,000	84,476,000

lowered in the East Coast and Louisiana-Arkansas districts.

In the first seven months of 1928 production was increased 13,032,000 barrels or 5.8 per cent over production the first seven months of 1927 but imports were 1,051,000 barrels or approximately 50 per cent less. Exports were 491,000 barrels or 1.8 per cent more. Figures on domestic demand are not available.

Eight Hundred Expected At Four State Meet

TULSA, Sept. 10.—More than 800 men engaged in the oil industry in Kansas, Missouri, Iowa and Nebraska are expected to attend the annual four-state convention to be held at Kansas City on Oct. 3, 4 and 5. Secretaries of the jobbers' association of the four states have had replies from that number who expect to be present.

The program committee is working out a well-rounded program for the three-day session. Speakers who have had wide experience in the fields of credits, advertising, manufacturing, marketing and ethics are being asked to lead the discussions.

The convention will be held under the auspices of the Oil Men's Club of Kansas City. Roy S. Reed of the Kanotex Refining Co., president of the club, has appointed a number of committees to prepare for the gathering. The committees were to make a preliminary report at the club meeting at Kansas City on Sept. 10.

Miller Is New Crystal Traffic Manager

SHREVEPORT, Sept. 8.—A. W. Miller of Shreveport has been named head of the traffic department of the Crystal Oil Refining Corp. here, and of the Burford Oil Co. which is building a refinery in west Texas. Mr. Miller was formerly chief rate clerk for the Texas & Pacific railroad, and just prior to his appointment with these oil companies was oil traffic expert for the Shreveport Chamber of Commerce.

F. W. Burford, vice president and general manager of the Crystal corporation here, is head of the Burford company. The new plant at Pecos is expected to be in operation by Nov. 1, although all units probably will not be completed before Dec. 1, Mr. Burford said this week following a trip to the site.

Moves Marketing Business To Tulsa

TULSA, Sept. 10.—Ellis Slack, formerly of Denver, has opened offices at 1027 Hunt building here. He expects to engage in the marketing of petroleum products in carload lots. Mr. Slack closed his Denver offices on Aug. 1 after having conducted a marketing business there for nine years.

GULF REFINING CO.
What motorists must SEE
AUTO drivers, eyes to the front, are ever alert to what is *ahead*. That fact can mean increasing sales to oil marketers who take advantage of it.
If, as motorists approach from some distance in either direction, you project into their line of vision some suggestion to "get gas here", are not a good many more going to stop and buy?
Let us show you how a Flexlume Electric Sign, white letters in bold relief by day or brilliant with electric light by night, can so emphasize the location and service of your station or stations that more gallonage must be sold. Write for full information and a free sketch in color of a Flexlume to fit your needs. Flexlume Corporation, 1775 Military Road, Buffalo, N. Y.
Sales and Service Offices in Chief Cities of U. S. and Canada
FLEXLUME
Factories also at Detroit, Los Angeles, Oakland and Toronto
FLEXLUME
ELECTRIC DISPLAYS

"QUICK-TOP"
CARRYING
CAN
HERE is the can that saves time and speeds up deliveries by its quick acting top—opens on one-eighth turn. Leak proof, gives lasting service. Answers all requirements better than any can yet produced. Made in black steel, painted in desired color, or hot-dip galvanized. Electric welded construction.
Perfectly balanced, carries nicely, pours smoothly, large handles easily gripped. Strong pressed chime permits dragging and banging without damage. Deeply concaved bottom prevents alteration of capacity, accurately calibrated to measure.
If you want to be convinced, send for a sample can; if you don't think it's the best can you ever saw or used, send it back, at our expense.
10 and 5 Gallon Sizes
COLUMBIAN
STEEL TANK CO.
KANSAS CITY, MISSOURI

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

INSULATING engineers always emphasize the fact that the life of insulating material in a refinery depends very largely on how well it is protected from the weather and from the impact of workmen's feet. That the life of insulation is long under favorable circumstances is being proved at the refinery of the Standard Oil Co. of Ohio in Cleveland.

Burton cracking stills at that plant have been abandoned, having been replaced by two Tube and Tank units. Insulation that was put on the Burton stills in 1916 is now being stripped off and placed on new bubble towers that are being erected. The insulation, which is some sort of asbestos composition, is in small slabs about 4 inches wide and two feet long and about an inch or an inch and a half thick. It appears to be as good as new material in every respect.

* * *

REFINERY operating men sometimes become sales managers but it is seldom that the thing works the other way around. It has at the Indian Refining Co., Lawrenceville, Ill., however.

B. H. Anglin, sales manager of the company for several years, a few months ago was placed in direct charge of refinery operations. A considerable part of his duties lie in the perfecting of a new process of refining lubricating oils that has been installed at the Indian plant, and building up an organization to operate it.

* * *

R. B. PIERCE, manager of the refining department of the Louisiana Oil Refining Corp., started out his professional career as a chemist in a Massachusetts paper mill, after graduating from the University of Maine, according to the "Loreco Diamond". He went to war, being commissioned a second lieutenant. He returned to the paper mills on leaving the army and remained in that industry until 1920 when he went to work at the refinery of the Beacon Oil Co. at Everett, Mass. He remained there until last October when he resigned to take his present position with the Louisiana company. He is 35 years old, is a native of Massachusetts, is a crack tennis player, is married and has a 15-month old daughter.

* * *

OHIO VALLEY REFINING CO. is increasing the capacity of its plant at St. Mary's W. Va., to about 100,000 barrels a month of crude, according to J. B. Northrop, plant manager. Mr. Northrop says installation has just been completed of two Springfield water tube boilers designed to operate at 275 pounds pressure and develop 700 boiler horsepower each. The boilers are equipped with steam flow meters, carbon dioxide recorders and automatic air and draft regulators.

The company also has contracted with Foster-Wheeler Corp. for two pipe stills. One of them is designed to run 2000 barrels of crude a day, reducing it to a 2 or 3 per cent bottom, taking off overhead through one tower, 106 feet high, six streams. There will be two gasoline streams, overhead cylinder stock, kerosene, gas oil and pressible wax distillate. The second pipe still-tower installation is somewhat smaller but is on the same principle. It will be used to reducing pressed wax distillate and wax free oils from the centrifuge department.

More and more attention is being paid by refiners to the possibilities that lie in taking off overhead cylinder stock streams and pressible wax distillate streams from intermediate plates in fractionating towers.

* * *

AMERICAN refiners improved efficiency of combustion in their refineries during 1927 so much that the fuel requirements per barrel of crude run were less than ever before. This is pointed out in a bulletin issued by the Bureau of Mines. The bulletin was the work of G. R. Hopkins, associate petroleum economist of the Bureau.

According to Mr. Hopkins, 584 billion British thermal units were used to refine 828 million barrels of oil in 1927, while 630 billion B.t.u. were used in 1926 to process 779 million barrels of oil. The factors used in making the calculation were: Oil, 6 million B.t.u. to the barrel; coal, 26 million B.t.u. to the short ton; gas, 1050 B.t.u. per cubic foot; coke, 30 million B.t.u. per short ton; one kilowatt hour, 3415 B.t.u. Refinery engineers made some progress in attempts to burn coke, the consumption of this material as refinery fuel exceeding the consumption in 1925 by nearly 50,000 tons. Mr. Hopkins, said, concerning the reduction in fuel consumption:

"A large part of the credit for the success attending fuel economy in 1927 may be attributed to the pipe still. This type of equipment has been in general use for but a short time, hence its effects on fuel consumption were perhaps not widely felt prior to 1927. In combination with heat exchangers, the pipe still enables the refiner to double or triple his throughput often without appreciably raising fuel requirements."

* * *

IT SEEMS there is always a lot of construction work going on around Pure Oil refineries. Part of this is due to the company's activity in building Gyro vapor phase cracking units which has been referred to before. The September issue of Pure Oil News records the following construction doings at the various Pure Oil plants:

Smith's Bluff, Tex.—Gyro unit will be ready to operate within a month.

Heath, O.—Six new fractionating towers installed on a shell still battery; McDonough draft control and feed water regulators installed on boilers; work under way on a Gyro unit and repairs to a Cross unit going on.

Marcus Hook, Pa.—New filter house and Sharples centrifugal dewaxing system to be installed and perhaps a grease plant. C. C. Balding to be in charge of construction work.

Ardmore, Okla.—Johns-Manville lightning protection apparatus being applied to tanks.

Muskogee, Okla.—A 37,000-barrel tank in the field has been cut down and moved to the refinery for use as a recycle stock tank.

Good Will

is an important factor in any successful business. The Humble Oil & Refining Company appreciates that to hold your good will it is necessary to supply you with products, the sale of which will gain and hold the good will of your customers.

Humble Motor Oils satisfy. They are produced only from high-grade cold-test crudes and are "straight run." They are not mixed or blended. Humble Motor Oils are of a clean, beautiful amber color and have just the right body to properly lubricate all bearing surfaces, and when burned leave little carbon to foul the motor or contaminate the crankcase mixture.

Humble Oil & Refining Co.

Houston, Texas

Producers - Pipe Lines
Refiners - - Marketers

"Zero Cold-Test Oils"

HUMBLE OIL & REFINING CO.
HUMBLE OILS
Reg US Pat Off
HOUSTON, TEXAS

STANDARD TANKS

"Built to a Reputation"

Pioneers in Standardized Steel Storage

STANDARD Tanks have set an enviable standard for steel storage the country over. The in-built quality is the result of over a score of years of careful workmanship.

We build in all capacities for all purposes from 65 gallons to 55,000 barrels.

THE STANDARD BOILER & PLATE IRON CO.

Niles—Ohio

USED GAS PUMPS

PISTON AND VISIBLES—VARIOUS MAKES
ALWAYS ON HAND

Prices very Reasonable

Address H. W. Vogt

MILWAUKEE TANK WORKS

Milwaukee, Wis.

Faster Service at Your Filling Stations

ALLISON COUPON BOOKS

Accurate — Compact — Convenient

Wide-awake filling stations are speeding up their service with Allison Coupon Books. No time wasted making change. No large cash balance on hand to invite theft. Furnished in stock or special designs. Absolute accuracy guaranteed. Send for samples and prices.

Allison Coupon Company

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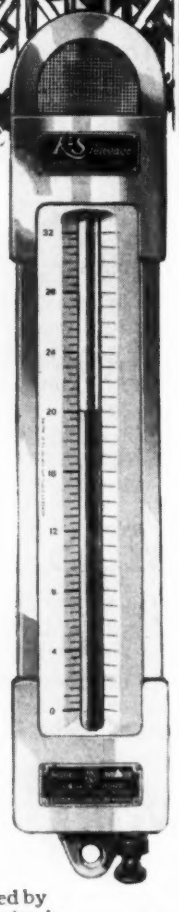
Coupon Book Specialists Since 1888.

THE HYDROSTATIC DISTANT READING GAUGE



Control Every Tank From a Central Point

THE oil distributor of today is on guard against careless handling of his stock. The contents of his tanks are like so much money in the till, not to be handled carelessly, or without proper accounting.

That is why so many distributors and refineries of oil are discarding the old-fashioned measuring stick, or tape and are guarding their stock with the K-S Telegage. With this precision instrument always before your eyes, you have a perpetual inventory of the contents of each tank whenever you want it.

At all times, with ease and accuracy, the K-S Telegage tells at a glance the depth of liquids in storage tanks. Placed at any distance from the tank and either above or below it as you may desire this precision instrument guards your petroleum products against checking errors, production losses and delivery "leaks." The reliability of the Telegage is assured by the fact that it is a product of the world's largest maker of distant reading gauges.

Our engineering department will be pleased to discuss any industrial gauge problem, if you will write giving a full description of your requirements. Give the Baume or Specific Gravity of each liquid to be measured, and the distance from tank to desired location of gauge. Descriptive folder sent on request.

Approved by Underwriter's Laboratories

KING-SEELEY CORPORATION
308 Second Street ANN ARBOR, MICHIGAN

Branch Offices:
New York: 44 Murray St.
Chicago: 473 Wrigley Bldg.

The K-S Telegage

BE CERTAIN WITH THE *K-S TELEGAGE*

Standard factory equipment on three-fourths of all cars selling for $700 or more.

Courses on Petroleum Announced

NEW YORK, Sept. 8.—A course in petroleum production problems, designed for employes of oil companies located on lower Broadway, will be given by the Wall Street Division of New York University this year under the leadership of Dr. Ernest R. Lilley, author of "The Oil Industry" and "The Geology of Petroleum and Natural Gas."

Students who take up this course meet each Monday evening beginning with Sept. 24 and continuing until May 13.

These subjects will be discussed in the course: Exploration, development and production technique; crude oil marketing procedure; problems of individual areas; crude oil valuation; overproduction problems; conservation and stabilization movements; property valuation and financing.

Pennsylvania Marketers Meet Oct. 15

HARRISBURG, Sept. 8.—A convention for Pennsylvania oil marketers alone is scheduled for Oct. 15, 16 and 17 by the newly-organized Pennsylvania Independent Oil Men's Association. It will be held at the Penn Harris Hotel at Harrisburg.

Although the speakers have not yet been announced, they will be men who are nationally known in the oil industry, according to R. A. Overholser, executive secretary.

One of the important features of the convention will be the election of officers for the coming year. Another feature is the consolidation of oil clubs in the state. A school for club officers will be held to explain more fully the purpose and benefit of various regional clubs in the state for oil marketers.

A large equipment exhibit is expected which will be in charge of N. A. Carlson, of Erie Meter Systems, Inc., Erie, Pa.

Plans are under way for plenty of entertainment.

NEW YORK, Sept. 8.—The patent rights and goodwill of the lime soda water softening business of the American Water Softener Co., Philadelphia, were purchased recently by the Paige & Jones Chemical Co., New York and Hammond, Ind.

W. T. Runcie, formerly sales manager and H. C. Waugh, engineer of the American company, have joined the Paige & Jones company.

Industry Should Furnish Good Toilets And Make Public Pay for Them

By Warren C. Platt, Editor

THE next big improvement in the oil industry service to the public will be providing really clean, comfortable and convenient comfort stations, not only for those using automobiles but for the general public. These facilities can and should be, however, of the pay-enter type and priced high enough so that those who use them will respect them and the oil companies get back their cost and if possible a profit.

We believe, from a study of the situation, that these comfort stations can in most cases be made profitable from their direct revenue as well as in gaining and holding more of the public good will.

The job of supplying comfort stations is by force of circumstances, falling on the oil industry. The industry has to have toilet facilities at its service stations for its employes. The public asks to use them. This use cannot be denied. The public find these toilets not all that they should be and many times, indeed, filthy. The public then condemns the oil industry. It is useless for the industry to argue that these toilets are not intended for public use. The public will insist on using them. So the oil industry might as well meet the situation frankly and intelligently.

Probably the job of supplying public toilets belongs to city, county and state government, but in this country few of these governments make any pretense at tackling the job.

Presumably our own backwardness in this regard is due to our early Puritan way of thinking. Such matters were not to be mentioned in public, let alone provided for by the community, regardless of what happened to the public health.

The taboo has affected everyone's viewpoint on it. Consider the unhealthy backwardness of the railroads in this regard; even the Pullman company has not always done what it should have or what it really has been paid by its customers to do. Consider all except the most modern of public and office buildings.

Now that tens of millions of our population are on the move every day in conveyances that heighten the calls of nature—and we might as well discuss this frankly in order to make a correct analysis of the oil industry's part in it—toilet facilities become imperative. These millions drive for miles on congested streets and highways where there is no cover of any kind. And, as we have said, they stop at the oil stations and demand the use of the toilets, regardless of why the industry has put them there and regardless of whether they are an extra expense. Men, women and children are in no mood to be argued with on any fine points of right, when seeking these facilities.

It would be fine if the government would tackle the problem, but if the government ever did it would be years before the job was done, if ever, and then only at terrific cost and in a sloppy fashion.

It can be argued that the public is getting along seemingly fairly well today in finding these facilities but the fact still remains that when it finds them in oil company stations, the oil industry suffers in reputation. Even pedestrians, who generally are automobile owners, are also using them more.

We can see no alternative, except that it is really the oil industry's duty to provide these facilities, and we think the industry will find it the best of good business to do it.

A great many oil companies have undertaken to supply this need. Some of them have done a pretty good job of it, a few an excellent job, but sad to relate, most of them have done a poor to wretched job.

The public is being rapidly educated to the highest standards on sanitary equipment by the advertising of the big plumbing manufacturers, the excellent installations in the modern office buildings, and the great improvement in bath room equipment in the homes.

So in considering the toilet problem the oil companies should do it in the light of the best that can be obtained today, first-class fixtures in clean, airy surroundings, scrupulously maintained. This all costs money but the pay-enter locks to toilets and towel and soap containers provide the answer. The industry need have no fear that these pay locks will make their customers mad. There is no reason why they should not be universal for the general public.

The industry should do the job, frankly, openly and well and advertise these facilities to the public. They could even be advertised in the newspapers and in such a way as to arouse the public's esteem for the oil industry and cause the public to aid in their care. This advertising could be of such a type as to make it easy for the diffident travelers, the women, to use these facilities, and their location could aid in this use. Don't put the women's toilet right where all the station attendants will be standing at the door.

There was much gasping at the first advertising of sanitary material for women and of toilet paper, yet that advertising has no doubt been of great value in improving public health and its peace of mind. That advertising has helped to overcome people's objections to asking for the material in stores. That the advertising undoubtedly would be used to some extent by the manufacturers of this material to aid the oil companies in their better toilet campaign, for all comfort stations should be equipped with this material, which too, is sold through automatic vending machines, producers of revenue for the oil companies installing them.

Oil companies have complained bitterly at how the public has abused such facilities as it has provided; at how the public has numbered some most filthy individuals and at how some of this public has walked off with everything around a rest room that was not bolted down. We will have boors with us always but their number is being reduced by our better standards of living and, so far as oil company comfort stations are concerned, they will be still further reduced by a 5 or 10-cent charge.

The cleanliness of these facilities can be still further

Speedy

EST. 1856 McDonald

Delivers Gasoline in *Record* Time

This new McDonald Hose Nozzle—with its full opening—sets a new standard for extremely fast delivery and combines this speed with rugged strength, comfortable grip, perfect balance and POSITIVE LEAKPROOF CONSTRUCTION.

It gives the attendant instant control of gasoline — no overflow, dripping or extra trips back to pump. Instead, it assures speedier, more satisfactory service.

Furnished with brass tubing spout. Can also be supplied with flexible tubing spout when desired. Made of high grade red brass in 1¼" size. Special reducer can be furnished if this nozzle is desired for 1" hose. Write for sample and complete information.

Plate 817-FF

Approved by Underwriters' Laboratories

"The Home of the Swing Joint"

A. Y. McDONALD MFG. CO.

Dubuque, Iowa

Omaha Minneapolis Des Moines Kansas City

There's A McDonald Distributor Near You

McDONALD

protected by advertising, by pamphlets and by signs at the stations and in the toilet rooms in which the oil companies can put the job of cooperating straight up to the users. If necessary, sections from local ordinances or state laws on the committing of nuisances can be quoted. For a percentage of the income of the pay-enter locks, the station attendants can be prevailed upon to do a real job of policing and maintaining the toilets. A dirty toilet room will hurt the revenue, a strong point to the attendants if they share in the revenue.

The big point to be emphasized is to put these toilets on a pay-enter basis. That is the only way to insure that a good job of equipping and maintenance will be done. Whatever is done free is most likely to be sloppily done. Besides there is enough free service around a station now. It would be far better if a charge were made for air and water.

The extent to which an oil company should change over its toilet facilities at once and the manner of so doing depends on circumstances. Obviously too great haste should not be made. The traffic for these stations should be studied just as is the traffic for a proposed filling station. The probably most profitable places should be equipped first and the patronage of these studied before further installations are made.

One thing should be certain though and that is that the oil companies not put in toilet facilities for their retail outlets on any lease-and-loan basis such as they have the gasoline and oil pumps in the past. These toilet facilities should be held strictly to oil company owned and operated stations. That should help to get some of the gallonage back to these stations that has been lost to garages and independently owned stations. The narrow margins today in the marketing business, which probably will never get unreasonably wide in the future—at least it is to be hoped so—will probably take care of this.

And today is the day to get started on planning this better service.

ON THE LAZY BENCH

National Petroleum News

Who Wouldn't Be Mad?

A gentleman visiting an asylum met a patient, to whom he said, "Well, my good man, how did you get here?"

"You see, sir," replied the inmate, "I married a widow with a grown-up daughter, and my father married that same stepdaughter of mine. That made my wife the mother-in-law of her father-in-law, and my father became my stepson. Then my stepmother, the daughter of my wife, had a son, and the boy of course was my brother, because he was my father's son; but he was also the son of my wife's stepdaughter and therefore her grandson, that making me grandfather of my stepbrother. My wife having had a son, my mother-in-law, the stepsister of my son, is also grandmother because he is her stepson's child; my father is the brother-in-law of my child, because his stepsister is my wife. I am the brother of my son who is also the son of my stepmother. I am my wife's brother-in-law; my wife is her own child's aunt; my son is my father's nephew and I am my own grandfather."—*The Diamond.*

* * *

Justification

"Jedge, yo' Honah," complained the irate colored lady to the court, "dis yeah no-'count husban' o' mine drinks."

"Yessuh, Jedge, yo' Honah, Ah does drink some," admitted the husband. "But Jedge, dat woman don' treat me right. Why, Ah pawns de kitchen stove t' git a li'l money an' she don' miss it fo' two weeks!"

—*Magnolia Oil News.*

A Scotchman was discussing with his friend a railway accident in which he and his wife had been caught, and his chances of getting damages from the railway. The Scotchman had gotten off with a broken arm.

"But tell me," asked his friend, "was your wife injured?"

"Not a scratch," said the Scotchman, "but, fortunately, I had the presence of mind to kick her in the face."

—*Our Sun*

* * *

Sandy bought two tickets for a raffle and won a $1,500 car.

His friend rushed up to his house to congratulate him, but found him looking miserable as could be.

"Why, mon, what's the matter wi' ye?" he asked.

"It's that second ticket. Why I ever bought it I cannot imagine."

—*Stanolind Record*

* * *

"I'm having a terrible time teaching that youngster of mine right from wrong," complained Myra, a young mother.

"Why, my dear!" ejaculated Rita, her dearest friend and severest critic. "Have you forgotten entirely?"

—*Skelly News.*

* * *

Service Station Attendant—Hey! Don't strike a match here—that tank is full of gasoline.

Class of '32—Think nothing of it. This is a safety match.

—*Loreco Diamond*

Empty-Handed

Judge—"Have you anything to offer the court before sentence is passed on you?"

Prisoner—"No, judge. I had ten dollars, but my lawyer took that."

—*Loreco Diamond*

* * *

"No, lady, I can't chop wood."

"Well, there will be some coal here any minute, and you can carry it in."

"Sorry, but I can't carry coal. If you have a gas stove, I'll light it for you."

—*Skelly News*

* * *

"Are you sure," an anxious patient asked a physician, "are you sure that doctors sometimes give the wrong diagnosis and have treated patients for pneumonia who afterward have died of typhoid fever?"

"I am a specialist," replied the medico indignantly. "If I treat a man for pneumonia he dies of pneumonia."

—*Stanolind Record*

* * *

A married man is one who has two hands with which to steer the car.

—*Loreco Diamond*

* * *

Knew His Capabilities

A recent college graduate applied, in a local butcher shop, for a job. The butcher looked him over carefully, and then said: "We need an energetic young man to run the slicing machine. Have you had any experience?"

"I used to play golf!"

—*Magnolia Oil News.*

* * *

The bibulous one halted in front of an enormous stuffed tarpon in a glass case. He stared at the tarpon for a minute or two in silence. Then he said:

"The fella who caught—hic—that fish is a—hic—liar."

—*Our Sun*

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Winter Trade
with
DEEPWATER OILS

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DEEPWATER OIL REFINERIES, Inc.

HOUSTON
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Refineries Only *Refineries Only*

Herman Bunge's super service station in Elgin, Ill., photographed the day before it opened for business. Here the automobile laundry is free at idle times to customers who are willing to do their own work

Free, Serve-Self Car Wash Brings Respect For Station's Paid Service

ANY customer can come to the new service station owned and operated by Herman Bunge, in Elgin, Ill., and get a free car washing job if he will do the work himself.

Out of his experience in operating an extensive oil marketing business, Mr. Bunge believes the customers who try it for a few times will have a real healthy respect for the first class car laundering job the station turns out at standard rates of payment for this service.

Mr. Bunge's offer applies to women as well as men. It is not uncommon to see a woman motorist, in a house dress and a bathing cap, wash her own car with the station equipment and then get in it and drive away. He thinks the experiment is worth while in several ways.

Oil men who operate laundries in small towns often speak of the apparent demand for a cheap washing job. A man can operate an automobile on a smaller income in a small town than in a city because of cheap housing and free parking facilities. Thus some motorists who are economically entitled to a car will balk at a $2 minimum charge for a washing job.

Confronted with this problem, a few operators have met it with "limited service." They arrange to give a customer a shower bath or a "hose down" for his automobile at $1, which cheapens the company's better and more profitable service and tends to dissatisfy the better customers, they say.

The free, self-service, plan has overcome this for Mr. Bunge's organization. Certainly free is cheap enough for anybody. So it has set up an almost insurmountable barrier in the way of a price-cutting competitor, if one should consider starting in business in Elgin. But it has not cheapened Mr. Bunge's service in the least.

As one attendant expressed it, "If they want to come in here and slop around and knock the dust of their car bodies and fenders, it is all right with us. But if they want a regular washing job; everything clean, on top and under the bottom, chassis, wheels and all, it is $2 for a small car and $2.50 for a big one. They get a real job if we do it."

Washing an automobile at a car laundry station is work. A great many motorists overlook that fact. They know it is work with a bucket and a brush in their own back yard, if they ever tried it, but they imagine the labor element is largely removed by the driving stream and the delicate spray, of the station's equipment. Once they try it, that notion is overcome. The better job they try to do for themselves free at Bunge's station, the better they know the job is worth $2 if it is done right.

By trying it himself, the man who thinks the price is excessive learns it is fair, and the man who does not realize how much his car needs washing can't help but find out. So it educates the uninitiated to the nature of the service as well as its value.

From the other standpoint it is a distinct service to the regular customer. The man who had his car washed $2 worth on Saturday may get it dusty or mud spattered on Sunday and only want to restore the appearance of the body. He can do that himself at no cost at all, much easier and quicker than he can do it with a rag, by driving down to Bunge's station.

In this way the service makes friends, brings customers to the station oftener and it gives them a chance to keep their machines looking well, which they appreciate.

The same free privilege is extended to the automobile lift in the greasing department, but there is no free greasing of course. However, if a motorist wants to look under his car he can put it on the lift and have a look for nothing.

The station's car washing and greasing facilities are such that, so far, free customers have not driven away pay trade which did not want to wait until a washing space or grease rack was open. Pay customers get first call on the facilities of course.

All this service is made available at Mr. Bunge's new station at North and Dundee streets, opened on June 23. In the vernacular of the trade it would be called a "super service" station, having four separate departments. Besides the gasoline and oil sales department, this station includes an auto laundry, a greasing department and an accessory store.

The accompanying picture was made before the station opened for business and gives no idea of the activity there now. It does, how-

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-Symbol of Quality-

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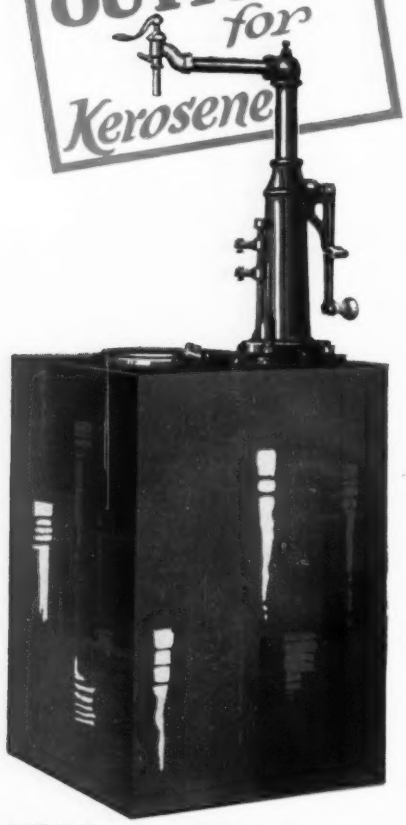

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PRECISELY ADJUSTABLE

MODEL 1065, 65-gallon capacity, 22" x 22" x 33½" high x 58" high over all Big Bertha Kerosene Tank Outfit with 14-gauge head and shell mounting Bennett exclusive 100% enclosed gallon, half gallon and quart dispensing kerosene pump with cylinder completely suspended within tank. All moving parts are enclosed and protected. Positive non-dripping shut-off nozzle is incorporated.

Other sizes, 120-gallon capacity, Model 1205 tank 28¾" square by 35½" high. Over-all height 60". Round outfits are Model 1060, 60 gal. capacity, 22⅜" diameter; and Model 1100, 110 gal. capacity, 30" diameter.

All tanks made of single pickle steel free from weak spots or pin holes and beautifully finished in your trade colors.

— Write for —

Complete bulletins on Big Bertha Round and Square Tank Outfits and Pedestal Pumps for dispensing kerosene and for dispensing gasoline to Muskegon. Bennett Export Corporation, 32 Broadway, New York City.

ever, show the lay-out, which embraces all the ideas about a service station that Mr. Bunge has acquired in his years of oil marketing.

The outstanding feature of the station is space. Plenty of room is provided to approach from two directions and the drive is perfectly clear. All the 20 pumps are arranged, five on a side, around the station building, elevated on a concrete platform. The station building is square, 40 x 40 feet and the projecting eaves overhang a space wide enough to shelter completely any car while being served. There are 124 lights under this roof outside.

"Twenty pumps may seem excessive to a person who has never seen the station," Mr. Bunge said. "But we handle four brands of gasoline and I wanted all brands accessible to any motorist no matter which side of the station building he might happen to approach. The competitive grade is most popular so there is an outlet for this product at both ends of each of the four rows of pumps."

Mr. Bunge handles mostly Sinclair products in Elgin and this station handles all three grades of Sinclair gasoline. Viewing any one side of the square station, the two end pumps contain Sinclair's competitive product at 17.4 cents. The middle pump is "H.C." Sinclair's high compression motor fuel at 20.4 cents. Left of center is Sinclair's high test, "Aircraft" gasoline at 20.4 cents, and right of center is Bunge's own special motor fuel called "None Such" high test at 24 cents a gallon.

Mr. Bunge says that, year in and year out, the volume on the three premium priced motor fuels will equal that of the competitive product in Elgin. This particular station has not been operating long enough to make a fair comparison.

The interior of the building contains two retiring rooms of the most modern equipment, not to be surpassed by the bath room of any hotel, use of which is free to customers. The wash bowls have hot and cold running water the year around. A local towel supply house keeps both supplied with fresh towels. These rest rooms are advertised to the public on a handsome sign that overhangs the street.

The main inside compartment is divided into a sales room and a lounge room, which is furnished in wicker, has a rug on the floor and a radio receiving set. The sales room has a glass show case for exhibiting small accessories and two installations of steel shelving for stock. It contains no motor oil storage. The lubes are brought to the sales room through pipes under pressure.

All the special services are rendered in the rectangular building on the back of the lot. Although only four doors show in the picture, there are five. The door which does not show in the picture leads to the lubricating oil stock room. In the basement under it is the furnace and boiler where an oil burner provides steam heat for the whole establishment.

On the ground floor of the stock room are two large air compressors. One is always in use and one in reserve for emergencies. The tanks of both are used all the time, however, to provide an ample air supply. The stock room also houses ten 65-gallon tanks, containing nine different grades of motor oil. One tank contains alcohol.

These tanks are kept under pressure and pipes lead from them to the sales room of the station and also to the draining and greasing departments. Oil and alcohol are measured to the customer in quart measures which are filled from the faucets, each of which is equipped with a visible bowl which enables the customer to see the oil he is about to buy.

Next to the motor oil stock room is the laundry. It is two cars wide and two cars deep. Four automobiles may be served at once in the laundry by two pressure pumps, one on each wall, installed about shoulder high to a man. When the company's workmen are busy in the laundry, customers never interfere to take advantage of the free service.

Just to the right of the laundry is the lubricating oil service department. It also has capacity of four cars. At the entrance of this department are two short drain pits of single car capacity. Beyond the first pit is a space where one car may stand on a concrete floor and be served with motor oil from the visible venders. Beyond the second pit is a mechanical lift. The whole department is housed for winter work but may be opened on both sides by raising overhead doors. There is no backing out. All cars drive clear through the station.

The two compartments at the right end of the building both contain long drain pits of two-car capacity. They are alike except that one entrance is taller than the other, being reserved for trucks with tall covers.

The new Bunge station is on a state highway and a great part of the patronage is transient. Tourists are aided by a large framed map of the vicinity, installed behind glass on the outer wall of the main building.

A perpetual tire raffle is carried on at the station, one tire being given away every week. Every customer who enters the station and buys gasoline is issued a receipt with a number on it and told to hold it a week. Using the duplicates of the receipt checks, one number is chosen by chance every week and posted on the station's bulletin board. The customer who returns with the re-

ceipt carrying that number gets a tire free.

Probably one in five of the lucky numbers are never matched by a customer. The assumption is the purchaser was a man from out of town who took his receipt and never had occasion to return and claim his tire.

Reagon Pays $1,500,000 Dividend

NEW YORK, Sept. 7.—Reagon County Purchasing Co. paid $1,500,000 in dividends Aug. 15. Marland Oil Co. owns 51 per cent of this company and the Texon Oil & Land Co. and Big Lake Oil Co. 24½ per cent each. There remains in the treasury of the Reagon company approximately $3,000,000 undivided earned surplus which, it is said, will be distributed soon.

Dr. W. A. J. M. van Waterschoot van der Gracht, formerly a vice president and director of the Marland Oil Co. of Delaware and previously head of the Royal Dutch-Shell interests in America, is spending the summer in the Styrian Alps. His friends may address him in care of Baron Hammer-Purgstall, Schloss Hainfeld, Feldbach, Steiermark, Austria.

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The following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C., trade-mark specialists.

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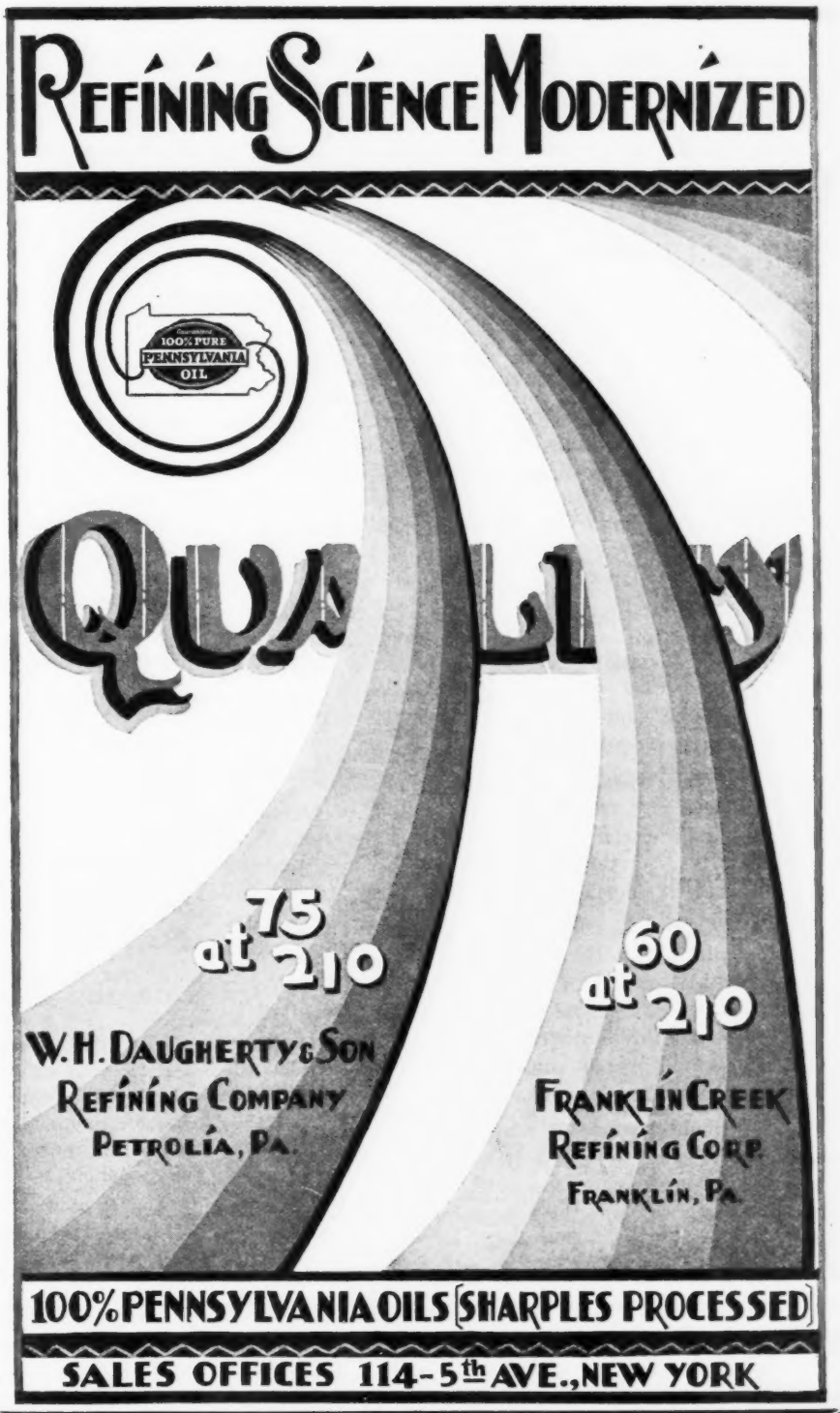
33209.—**Lubricating and refined (?) oils and paraffin,** Mogador, Morocco, agency and purchase.

33226.—**Lubricating oils,** Halle, Germany, agency.

33261.—**Paraffin for soap making,** Riga, Latvia, agency.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The Editors' Viewpoint

National Petroleum News

Tighten Up On Credit

ONE important way in which the marketer can meet the shrinking margin between the tank car price and his retail sales price of petroleum products is by tightening credit to dealers and consumers.

Wide margins in any line of business have always been provocative of careless granting of credit. The oil business has not been backward in this respect. While intelligent granting of credit has increased business without doubt, nevertheless, in the competition for business, intelligence has often been ignored in the oil business in the giving of credit.

There never really has been any reason why gasoline and lubricating oil sold to the consumer, particularly through service stations, should not be on a cash basis, except in the case where trucks of well-known companies are being supplied. Even there, the credit should not be given beyond 30 days.

But with the consumer, the private car owner, there has never been any reason for the granting of credit because it is not a convenience to him, no matter if he thinks it is, and it certainly is not only an inconvenience but a source of much expense and worry to the oil company.

A man who hasn't three or four dollars in his pocket to pay for his gasoline and several quarts of oil when he gets it, certainly should keep his car at home until he can dig up the three or four dollars. If he hasn't got them, he is the worst kind of a credit risk and the very man who should not have credit.

It also would be doubly wise on the part of the oil marketers to pull in on their giving of credit at the present time because of the quiet condition of a lot of businesses and the fact there is a certain amount of unemployment.

Coupon books should be sold for cash and not credit and the discount for them should be only enough to represent a reasonable cash discount. The giving of 10 per cent to 15 per cent and more discount for coupon books and, particularly selling them on a credit basis, is anything but sound business. Now that there is a necessity for stopping it, it should be stopped.

Now is an excellent time for the oil business to get more nearly on a cash basis than it has been for some years.—W. C. P.

Avoiding Storage Helps Industry

THE policy of producers of attempting to hold down storage stocks of crude oil in west Texas, is an effort worthy of commendation. It ranks in some ratio of importance with the now generally recognized value of the movement to conserve oil and financial resources through rational development. The fact that west Texas stocks total more than 26,000,000 barrels, and all tankage soon will approximate 42,000,000 barrels, fades into insignificance when the potentialities of the region are studied.

Storage programs that would have been necessary to handle unrestrained development, could not have stopped short of hundreds of millions of barrels of construction. To have built storage, filled it and carried the oil for only one year would have cost an amount at least equal to, and probably greater than, the present posted price of 60 cents a barrel for west Texas sulfur crude. It is readily apparent that little west Texas stored crude could be moved out of the classification of "frozen" stocks for years; interest, depreciation and other carrying costs amounting to about 25 cents a barrel annually would increase storage liabilities regularly.

Unfortunately, the quantity of stored oil now carried by companies throughout the United States, which may never be liquidated at a profit, has been a real damper on improvement in the petroleum industry. It is almost never possible to avoid the stocking of some quantity of crude oil in new and remote producing areas, but the extent to which this can be avoided is helpful.

The policy of avoiding the unnecessary storage of crude is no less an economy measure than is the rational development of fields through conservative drilling operations.—P. W.

Shaking Down the Oil Companies

STATUTES and ordinances that discriminate against the oil industry seem to be without end and emphasize the need of the industry to be ever on guard. An ordinance placing a heavy penalty on the business of selling gasoline and oil was recently passed by the city council of Keokuk, Iowa.

The Keokuk ordinance provides a fee of $30 for each tank up to 15,000 gallons' capacity at bulk plants and a prorata additional fee for larger tanks. Above ground tanks may not be placed nearer than 200 feet to dwellings, schools, churches or other places of assemblage.

To get a license for a service station, the written consent of every property owner within 300 feet of the station must be had. Stations are licensed at $10 a pump a year. The station owner must also pay $1 a foot a year for any driveways that cut the curb in excess of 20 feet in the business district defined in the ordinance, and 50 cents a foot for the excess over 20 feet in non-business districts.

In applying to the council for a permit to build a station, the oil company must submit a drawing of its projected station including location of tanks and all structures on the property, together with a sketch of all buildings within 100 feet of the property.

The ordinance carried provision for a fine of $100 and imprisonment for 30 days for violations.

The Keokuk ordinance again brings into the spotlight the fact that the gasoline and oil distributor's worst enemy is the politician looking for more money to spend, and not his competitor.—R. B. S.

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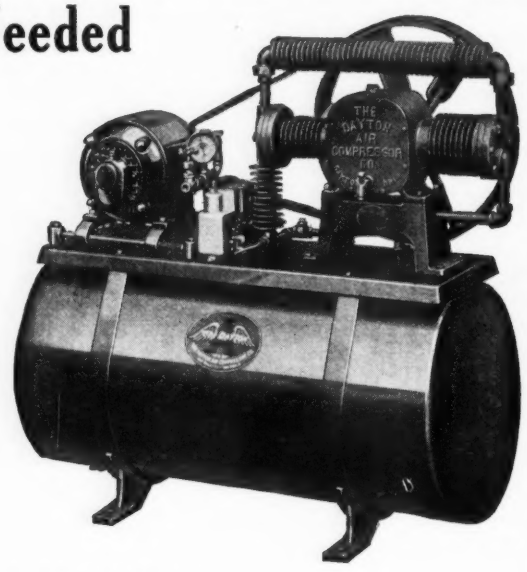

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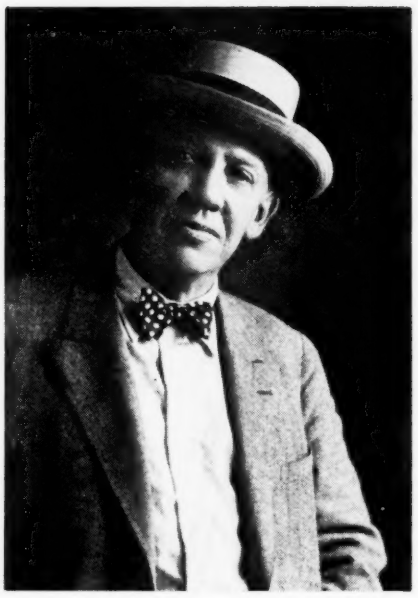

H. D. COOK

Former Mayor Can Sell Gasoline, Too

ASHTABULA, O., Sept. 7.—A mere bowing acquaintance with gasoline as it passed into his gasoline tank was what Hiram D. Cook had with that commodity about four and one-half years ago.

About that time, Mr. Cook, or "Hi" as he is familiarly known, decided to try his hand at selling gasoline. So he thought out a design for a station which looked good in his mind's eye and hired men to carry out those ideas. He opened his first station about four and a half years ago and sold 2700 gallons of gasoline the first week.

During one of the peak months the past year, the Central Standard Service Co., under which name the 12 stations are operated, sold 300,000 gallons of gasoline.

The stations are located on the main traveled highway between Conneaut and Cleveland, O. Their distinguishing features are the unusually spacious driveways under a triple-canopy, the canopy stretching out to the side-walk where it is readily seen from afar by motorists.

The only thing which can be called essentially a "free service" idea that Mr. Cook has ever tried out at his stations is a copy of the morning paper which he hands out to customers who stop at his station for gasoline on their way down town to work in the morning.

Mr. Cook at one time owned a shoe store here. He is now a real estate operator in addition to his oil business, having been prominent in the development of one of the best residential districts here. He was at one time mayor of Ashtabula and has been more or less in the political spotlight for the past 20 years.

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended September 7 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Sept. 7	Total Week Ended Aug. 10
Plants Reporting	12	29	29	12	82	81
Crude Capacity	92,000	160,200	130,100	54,900	437,200	434,700
Cracking Capacity	30,700	52,600	17,200	22,700	123,200	123,200
Da. Av. Crude Runs	75,748 + 3.2	117,650 — 1.0	88,734 — 11.7	54,185 — 6.6	336,317 — 4.1	324,792
Da. Av. Other Oils	7,909 — 12.2	1,015 — 72.8	6,041 + 10.7	405 — 65.7	15,370 — 20.7	19,159
GASOLINE—Gallons						
Stocks, Aug. 31	7,871,000	21,624,000	14,279,000	3,352,000	47,126,000	50,459,000
Prod. 8-31 to 9-7	11,458,000 + 4.2	18,084,000 — 8.4	9,879,000 — 10.7	5,003,000 — 8.0	44,424,000 — 5.9	43,705,000
Ship. 8-31 to 9-7	10,892,000 — 3.9	18,329,000 — 9.4	10,277,000 — 2.5	4,369,000 — 16.9	43,867,000 — 7.4	47,171,000
Stocks, Sept. 7	8,437,000 + 7.2	21,379,000 — 1.1	13,881,000 — 2.8	3,986,000 + 18.9	47,683,000 + 1.2	46,993,000
Ratio Sales to Prod.	95.1%	101.4%	104.0%	87.3%	98.7%	107.9%
KEROSENE—Gallons						
Stocks, Aug. 31	8,110,000	3,143,000	1,025,000	389,000	12,667,000	13,852,000
Prod. 8-31 to 9-7	2,281,000 — 9.1	2,695,000 — 4.3	1,543,000 + 1.1	131,000 — 77.4	6,650,000 — 10.5	6,643,000
Ship. 8-31 to 9-7	2,377,000 — 11.0	2,657,000 + 0.5	1,347,000 — 25.7	167,000 — 72.1	6,548,000 — 15.3	7,229,000
Stocks, Sept. 7	8,014,000 — 1.2	3,181,000 + 1.2	1,221,000 + 19.1	353,000 — 9.3	12,769,000 + 0.8	13,266,000
Ratio Sales to Prod.	104.2%	98.6%	87.3%	127.5%	98.5%	108.8%
STOVE DISTILLATE—Gallons						
Stocks, Aug. 31	2,114,000	3,321,000	754,000	87,000	6,276,000	5,302,000
Prod. 8-31 to 9-7	63,000 — 78.5	505,000 + 0.8	295,000 + 10.5	129,000 + 4.9	992,000 — 16.2	842,000
Ship. 8-31 to 9-7	195,000 — 31.3	563,000 + 53.4	265,000 + 17.8	133,000 + 40.0	1,156,000 + 19.1	536,000
Stocks, Sept. 7	1,982,000 — 6.2	3,263,000 — 1.7	784,000 + 4.0	83,000 — 4.6	6,112,000 — 2.6	5,608,000
Ratio Sales to Prod.	323.1%	111.5%	89.8%	103.1%	116.5%	63.7%
GAS OIL—Gallons						
Stocks, Aug. 31	6,661,000	38,759,000	4,147,000	5,893,000	55,460,000	55,727,000
Prod. 8-31 to 9-7	1,482,000 — 15.9	2,188,000 — 35.2	1,833,000 — 5.3	2,010,000 + 38.0	7,513,000 — 11.9	8,337,000
Ship. 8-31 to 9-7	1,794,000 + 12.5	2,835,000 — 2.7	1,389,000 — 20.5	1,712,000 — 4.0	7,730,000 — 3.9	7,308,000
Stocks, Sept. 7	6,349,000 — 4.7	38,112,000 — 1.7	4,591,000 + 10.7	6,191,000 + 5.1	55,243,000 — 0.4	56,756,000
Ratio Sales to Prod.	121.1%	129.6%	75.8%	85.2%	102.9%	87.7%
FUEL OIL—Gallons						
Stocks, Aug. 31	21,593,000	58,942,000	70,501,000	18,610,000	169,646,000	155,429,000
Prod. 8-31 to 9-7	6,847,000 — 15.1	7,246,000 + 3.5	12,681,000 — 11.4	7,930,000 — 8.4	34,704,000 — 8.8	35,670,000
Ship. 8-31 to 9-7	7,015,000 — 7.5	6,495,000 — 4.6	11,652,000 — 6.9	6,534,000 — 26.0	31,696,000 —11.3	33,425,000
Stocks, Sept. 7	21,425,000 — 0.8	59,693,000 + 1.3	71,530,000 + 1.5	20,006,000 + 7.5	172,654,000 + 1.8	157,674,000
Ratio Sales to Prod.	102.5%	89.6%	91.9%	82.4%	91.3%	93.7%

Gasoline Produced by Various Methods, Week Ended September 7

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	7,593,000	66.3	11,931,000	66.0	7,791,000	78.9	2,213,000	44.2	29,528,000	66.5
Cracked	3,302,000	28.8	5,359,000	29.6	1,687,000	17.1	2,240,000	44.8	12,588,000	28.2
Natural	563,000	4.9	794,000	4.4	401,000	4.0	550,000	11.0	2,308,000	5.2
Total	11,458,000		18,084,000		9,879,000		5,003,000		44,424,000	

+ or — columns are % change from previous week.

Gasoline Shipments and Output Fall in Mid-Continent

Staff Special—By Telegraph

TULSA, Sept. 11

SHIPMENTS of gasoline from 82 refineries in the Mid-Continent field dropped 3,500,000 gallons, or 7.4 per cent during the first week in September, according to reports gathered by NATIONAL PETROLEUM NEWS. Total motor fuel shipments for the week ended Sept. 7 were 43,867,000 gallons, as compared with 47,362,000 gallons during the week ended Aug. 31.

Following their policy of regulating production in line with demand to keep stocks from piling up at this season of the year, refiners reduced their production of gasoline 2,800,000 gallons, or 5.9 per cent during the week. Gasoline production totaled 44,424,000 gallons, compared with 47,227,000 gallons in the last week of August. The reduction in gasoline

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Sept. 7. Change in stocks figured from Aug. 10.

GASOLINE

	Gallons
Production	184,023,000
Shipments	183,333,000
Net change in stocks	+690,000
Ratio sales to production	99.6%

KEROSENE

	Gallons
Production	28,096,000
Shipments	28,593,000
Net change in stocks	—497,000
Ratio sales to production	101.8%

STOVE DISTILLATE

	Gallons
Production	3,558,000
Shipments	3,054,000
Net change in stocks	+504,000
Ratio sales to production	85.8%

GAS OIL

	Gallons
Production	30,956,000
Shipments	32,469,000
Net change in stocks	—1,513,000
Ratio sales to production	104.9%

FUEL OIL

	Gallons
Production	152,973,000
Shipments	137,993,000
Net change in stocks	+14,980,000
Ratio sales to production	90.2%

Gasoline and Oil Filling Stations

and Steel Buildings

We manufacture the simplest to the most elaborate Stations. Put your own individuality in your Filling Stations—Let us help you work this out.

The Edwards Manufacturing Co.

524-544 Eggleston Ave. Cincinnati, Ohio

More *cleaning* power to you!

WHEN you have Oakite materials to help you remove dirt, oil and grease, you have sufficient power to take the toughest cleaning job "in high"!

Storage tanks and trucks are cleaned in less time, with less labor; drums are washed, inside and out, thoroughly and easily; floors and concrete driveways made spick and span with a minimum of effort.

Directions for using high-power Oakite cleaning materials are contained in booklet "Oakite in the Oil Industry." Your copy is ready and will be sent on request.

Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.

Manufactured only by

OAKITE PRODUCTS, INC.

42C Thames St., New York, N. Y.

OAKITE

Industrial Cleaning Materials and Methods

GULF Refining Company

General Sales Offices

PITTSBURGH, PA.

District Sales Offices

New York, Houston, Boston, New Orleans, Philadelphia, Atlanta, Louisville, Tampa

REFINERS OF OKLAHOMA, TEXAS AND LOUISIANA

PETROLEUM

Refined Oil, Gasoline, Naphtha, Gas Oils, Paraffine Wax, Petroleum Coke

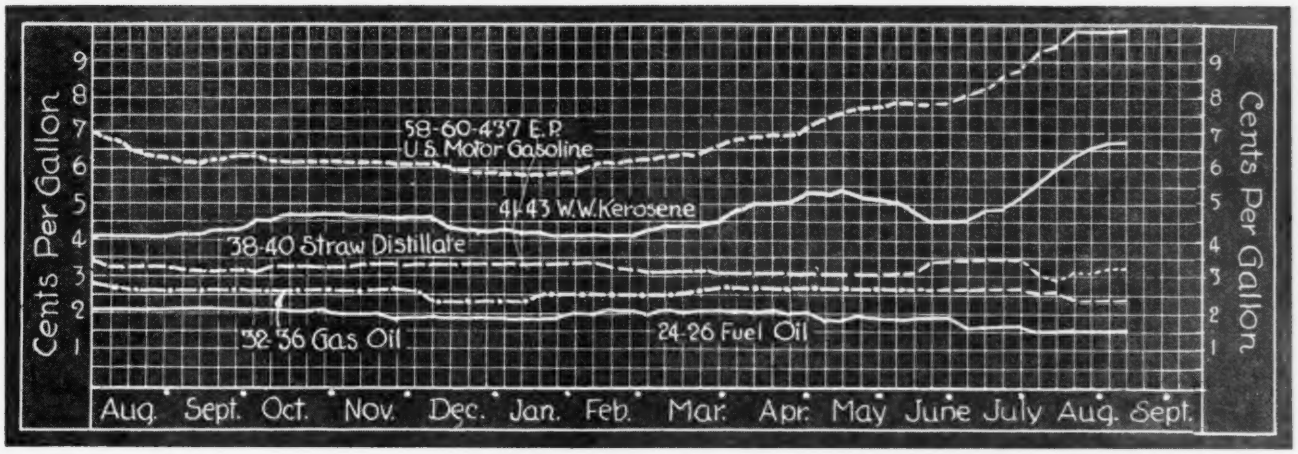
FUEL OILS

LUBRICATING OILS

Cylinder, Engine, Cordage

RED AND PALE PARAFFINE OILS

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P.
U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

production was not quite as large as the drop in demand, with the result that stocks increased 555,000 gallons or 1.2 per cent during the week. On Sept. 7 stocks totaled 47,683,000 gallons.

In order to bring production of gasoline down in line with demand refiners reduced their crude runs 4.1 per cent or 14,400 barrels daily average. Charges of partly refined oils to stills also were reduced 4000 barrels daily average. In the last week of August crude runs at the 82 plants averaged 350,743 barrels per day. This week the total was down to 336,317 barrels per day. Other oil charges dropped from 19,374 barrels per day to 15,370 barrels per day.

North Texas refiners who had been experiencing difficulty for two or three weeks in keeping their gasolines moving, reported the heaviest cut in runs. Average crude charges for the week were 88,737 barrels per day as compared with 100,533 barrels per day the previous week. This was a cut of 13,800 barrels daily average or 11.7 per cent. As a result of this cut the Texas group reduced gasoline production 10.7 per cent to 9,879,000 gallons and drew 400,000 gallons from storage.

North Louisiana and Arkansas refiners reduced their crude runs 3800 barrels daily average or 6.6 per cent to 54,185 barrels per day. A cut of 8.0 per cent was made in gasoline production but shipments fell 16.9 per cent at the same time so that the group added 634,000 gallons to storage.

Oklahoma refiners reduced their runs of crude a little over 1000 barrels daily average to 117,650 barrels per day and continued to draw on storage, cutting reserves 245,000 gallons. In Kansas runs were increased 2350 barrels daily average with the result that gasoline stocks increased 566,000 gallons.

Kerosene supply and demand was almost in balance during the week. Production for the week totaled 6,650,000 gallons and shipments were only 100,000 gallons lower, totaling 6,548,000 gallons. Stove distillate demand increased 19.1 per cent during the week to 1,156,000 gallons, causing a reduction in stocks of 164,000 gallons. Stocks Sept. 7 totaled 6,112,000 gallons.

Gas oil production dropped 11.9 per cent during the week while shipments fell off only 3.9 per cent. As a result stocks were cut 217,000 gallons to 55,243,000 gallons.

Fuel oil stocks increased in spite of the drop in production. Shipments dropped 11.3 per cent to 31,696,000 gallons and stocks increased 3,000,000 gallons to 172,654,000 gallons.

Weighted Average Prices Oklahoma Market

On Feb. 6, 1928, National Petroleum News adopted the policy of publishing weighted average prices on the four more important gasolines in Oklahoma, instead of a range in prices. These weighted averages together with the number of cars of each grade sold, as of Monday, Sept. 10, are published below. The figures are not available for publication in the refinery market table on page 108 of this issue.

	Total Cars	Weighted Average
58-60 U. S. Motor, 437 e. p.	**79**	**9.7500**
60-62, 437 e. p.	**3**	**9.7917**
60-62, 400 e. p.	**1**	**10.3750**
64-66, 375 e. p.	**5**	**11.0000**

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery in tank car lots.

P. R. (Pete) Smith, manager Arkansas-Louisiana division, Pure Oil Co.

Smith and Martin Get New Pure Oil Jobs

HOUSTON, Sept. 6.—Appointment of P. R. (Pete) Smith to be Arkansas-Louisiana district manager of the Pure Oil Co.'s production activities has been followed by promotion of Paul R. Martin, who becomes chief scout at Fort Worth.

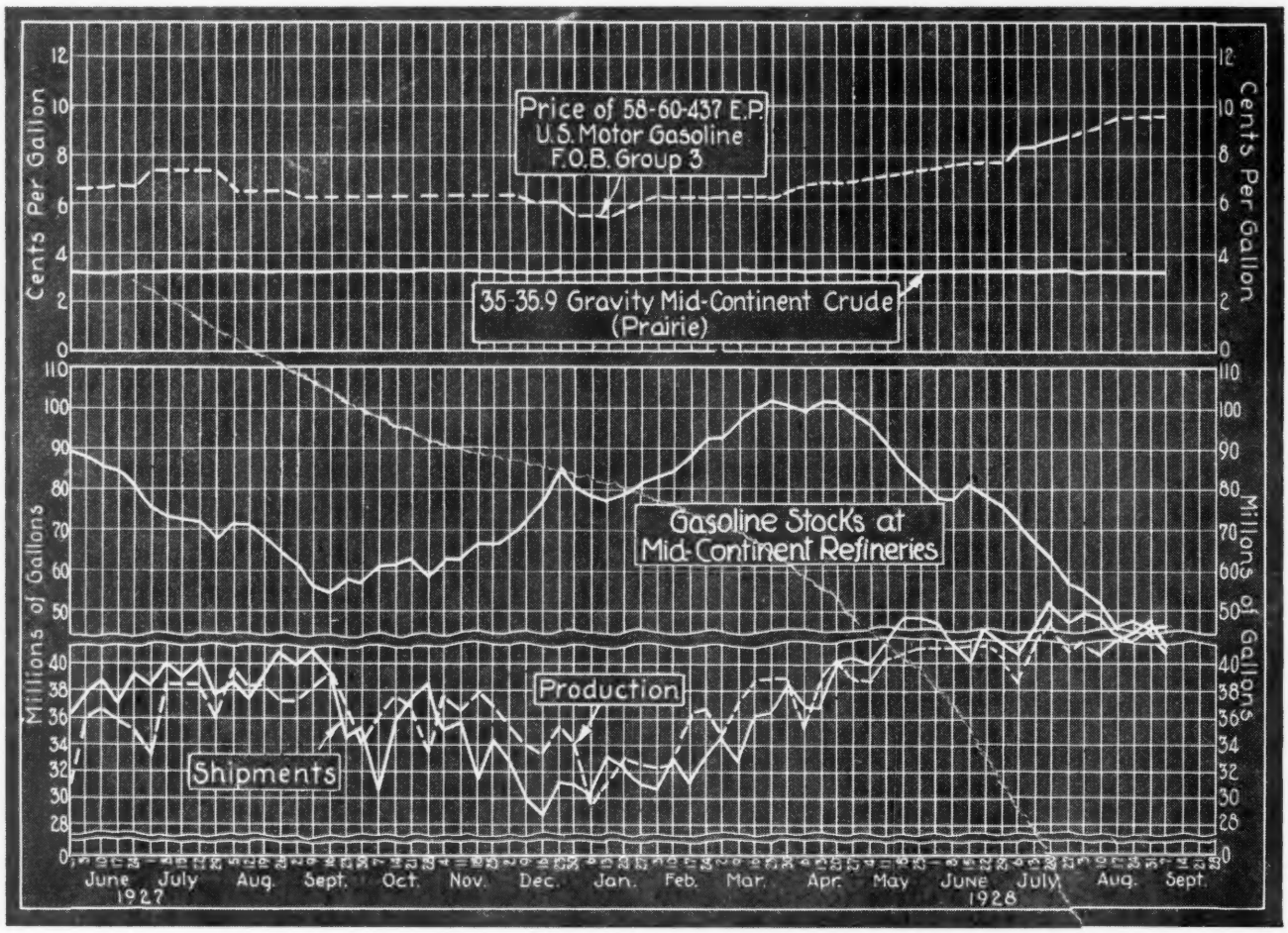
Mr. Smith has been with the Pure organization since 1920, when he went to work for the company at Pittsburgh. Later, he worked in West Virginia, New Mexico and Texas. He went to Fort Worth a year ago, when southwestern general offices were moved from Mexia.

Mr. Martin has been in charge of the Pure's scouting office at Amarillo the last two years and a half. He was president of the National Oil Scouts Association in 1926.

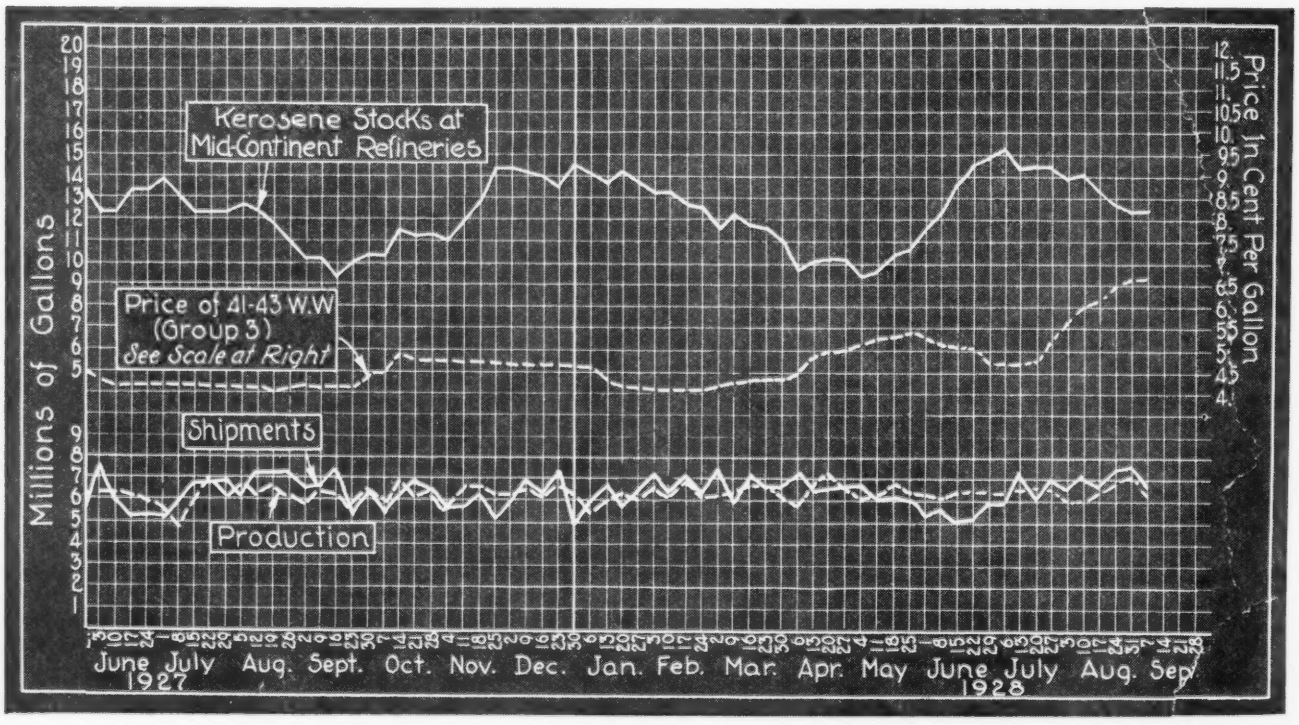
TULSA, Sept. 8.—Skelly Oil Co. and subsidiaries report net earnings of $654,756 for July after estimated federal taxes and reserves for interest, depreciation and depletion. This was the best month the company has had since September, 1926, the company reported.

Barometer of Mid-Continent Refinery Market—Week Ending September 7

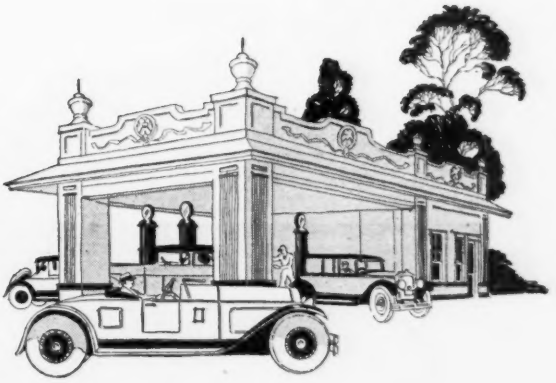
Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 82 Plants to National Petroleum News


Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at Mid-Continent Refineries
Production
Shipments
Millions of Gallons
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on the opposite page


Kerosene Stocks at Mid-Continent Refineries
Price of 41-43 W.W (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cent Per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sep
1927
1928

How they made better producers out of their service station salesmen—



THE Wadhams Oil Company of Milwaukee wanted more volume—more profits out of their service stations. They wanted the kind of sales that stay and grow—not the kind that come and go.

And they decided the way to get it was through making better business getters and business keepers out of the salesmen in their stations.

So they came to the Corporation Service Division of LaSalle Extension University.

After a thorough joint survey of the situation, LaSalle was commissioned to prepare a special training in Wadhams Service Station Salesmanship.

Then the material for the training was gathered first hand—on the ground—in face-to-face contacts with Wadhams customers and Wadhams men and competition.

And when the training was completed and given to the men in efficiently supervised home-study form—it produced profits because it was practical and built to fit the problems at hand—built out of a combination of Wadhams knowledge of the oil distributing business and LaSalle experience in preparing and transmitting training.

Talk today with any Wadhams man—from the President down—and you'll get some surprising facts.

Eighty-four per cent of the 400 men enrolled went through the training on schedule and proved by their increased production that they profited by it. Sales increased—more gasoline per customer—more oil sales with gasoline. Service improved—more regular customers coming day after day instead of occasionally. Greater satisfaction—Wadhams service meant intelligent service. Many additional sales of Wadhams products not ordinarily made—traceable directly to the new knowledge of motor car requirements and the new interest toward and understanding of their work on the part of Wadhams men.

And—as a gratis by-product—fewer employees deserting their jobs.

* * *

The heads of the Champlin Refining Company of Oklahoma have adopted a similar LaSalle training program—entirely different however from Wadhams' as it is built specially for Champlin needs and problems—and are finding the same sure results.

The reason is simple.

To the oil man's knowledge and experience in his business, LaSalle adds its *proven ability and facilities for training groups of employees through courses built specially for the company they serve.* Twenty years have been spent by LaSalle in learning how. Millions of dollars have been expended in building the right kind of training courses—a staff of experts has been assembled who through long and practical experience know how to produce special training courses which enable men to get increased results on the job.

* * *

To a limited number of oil companies, we can say that we are prepared to study your problems and needs and decide whether we can serve you valuably.

An inquiry—on your business letterhead—will without obligation to you receive our prompt attention and afford us an opportunity to discover for your satisfaction and ours whether we may or may not be of real service to your organization.

Corporation Service

A DIVISION OF

LASALLE EXTENSION UNIVERSITY

Michigan at 41st Street, Chicago, Illinois

NOTE: We have no idea as to the number of oil companies that may respond to this announcement, although our work in the field has disclosed an almost universal need. If you are interested in the character of betterment offered by this service it may be advisable for you to write promptly.

What the Companies Say

"Our customers have written us, telephoned us and even come down to our office to remark about the difference in the way our men run their stations in comparison with six months or a year ago. These expressions have been entirely unsolicited, and the customers did not know how this difference happened to come about. We find that our men take a keener interest in their work and in the stations, and greatest of all, a keener interest in themselves. They know our products and they now know how to sell them."—*Wadhams*

"...the thorough way LaSalle came into our organization and made a complete study of our products and our sales problems which enabled them to give us a training course that will come nearer than anything I know of to help our sales organization reach the highest degree of efficiency."—*Champlin*

What the Men Say

"The other day while making a review of the 'Ten Commandments' it came to my mind that now would be a good time to go out and sell a few coupon books, and as I was off duty I took a few books with me, and do you know that with a little of the salesmanship taken from your good work I sold six $10.00 coupon books and four of these were consumers who had never been in my station. Mind you, the inspiration was received through a review of your 'Ten Commandments.'"

"I have just completed my last lesson, and it surely was interesting and instructive from start to finish."

"The whole course was very interesting and I have gained great benefits from every lesson."

"Every text was very interesting and helpful."

"This training sure does come in handy in my daily routine at the station."

"The course is the best thing out."

"I was always waiting for the next text to arrive to get more information how to handle customers intelligently."

"I sure got my share out of your course."

"I think LaSalle's training sure is fine. It is thorough and given in a way that is interesting. I enjoyed it."

"Your training course has helped me 'swell my sales' most every day."

"I was a little skeptical at first, but I think it is really worth while."

"Has been very profitable to me."

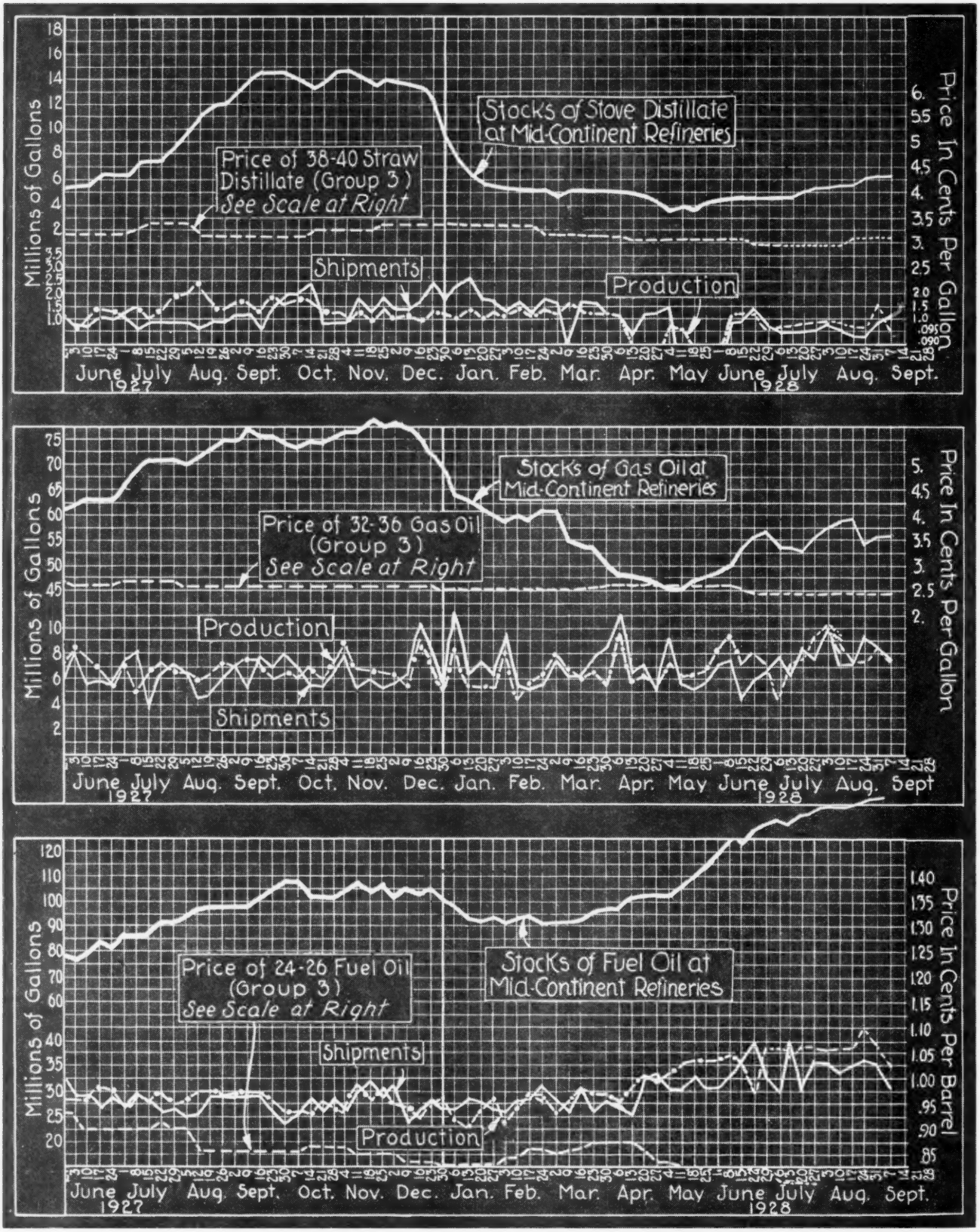
"I enjoyed the LaSalle Course a great deal."

"The course sure was a dandy."

"While I have been selling oils and gasoline for the Wadhams Oil Company in the field and here in Madison for a period of approximately eight years, yet this course has taught me many new things about the sales game."

Barometer of Mid-Continent Refinery Market—Week Ending September 7

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 82 Plants to National Petroleum News


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept
1927
1928
Millions of Gallons
Price In Cents Per Barrel
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Stocks of Fuel Oil at Mid-Continent Refineries
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Refinery - Tank Wagon Markets

National Petroleum News

North Texas Gasoline Markets Improve; Exporters Order Million Gallons

Staff Special
TULSA, Sept. 8

A GRADUAL improvement in the gasoline situation in north Texas and the purchase of a million gallons of export gasoline aided the Mid-Continent refinery market during the first week of September. Domestic gasoline buying was slower than it has been at other times this summer but orders still were in sufficient volume to prevent any appreciable amount of gasoline going into refiners' storage tanks. Prices were generally unchanged in Oklahoma and Kansas, lost some ground in Arkansas and Louisiana, but gained a little in north Texas.

Natural gasoline prices broke downward from 1 to 1.25 cent a gallon. Buying was slow and no large users had orders in the field.

Kerosenes maintained the strength they have shown for the past few weeks, although prices were unchanged. Goods continued to be comparatively scarce in all areas for prompt shipment.

Distillates were in better demand at higher prices. Gas oil was steady. Fuel oils were quiet at prices which have prevailed for some time. Bright stock was more active and wax was difficult to obtain in Oklahoma for September shipment.

Gasolines

The north Texas gasoline situation which the last week in August threatened the entire Mid-Continent gasoline market, showed considerable improvement after Labor Day and the market Sept. 7 was firmer.

A part of this improvement was due to the purchase of export gasoline. An export buyer obtained in both Oklahoma and Texas approximately 1,000,000 gallons of 64-66, 375 end point gasoline Sept. 6. The bulk of the goods will move out of north Texas. Prices paid were 9.75 cents for some of the gasoline and 9.875 cents for the remainder.

While these prices were lower than those at which the previous sales were made, the fact that exporters have renewed interest in the market brought some optimism to the field. At the same time one or two large refiners were reported to be inquiring for goods to fill out their own retail distribution requirements.

Oklahoma refiners made no changes in their gasoline prices. The post holiday demand Tuesday and Wednesday was good with many instructions to rush shipment, but Thursday orders slowed up somewhat. Friday and Saturday several refiners reported new inquiries were coming in, many of them from buyers who had been out of the market for several days. Despite the slower buying, orders are still at a higher level than they were this time a year ago. Stocks are still at such a low figure that several refiners report they are all but draining their tanks each day.

The Louisiana and Arkansas refiners reduced their prices for U. S. Motor gasoline 0.25 cent a gallon but are still obtaining 10.25 cents a gallon for goods shipped into their freight differential territory. Kansas refiners have been obtaining 9.875 cents a gallon for the bulk of their goods moved into Kansas, and have been shipping other gasolines at the prevailing Group 3 quotation of 9.75 cents a gallon.

Several brokers during the week have offered gasolines at 9 and 9.25 cents a gallon, Group 3 freight basis, but a careful check indicates the bulk of this goods is moving from the west Texas and the Texas panhandle areas. Some of this gasoline has been worked out to where it will pass a fairly satisfactory doctor and corrosion test, but much of it is both doctor sour and corrosive, and the odor is unsatisfactory.

Natural Gasolines

Natural gasoline prices tumbled the first week of September as rapidly as they climbed some weeks in July and August. Buying throughout the week was spasmodic and in small lots. Price of grades A and AA slid from 9.75 cents Sept. 1 to 8.75 to 9 cents Sept. 8. The break in prices of grades B and BB and C were more pronounced, these commodities cutting away from the price of grade AA Sept. 6. Grades B and BB Sept. 8 were bringing 8.75 cents, while grade C was moving at 8.50 cents as compared with 9.625 to 9.75 cents a week ago.

Kerosenes

No change was noted in the kerosene market throughout the week. Demand continued to keep some refiners buying while a few report they are still out of the market. One or two who a week or 10 days ago had some goods in storage, have cut into those stocks considerably since Sept. 1.

In Texas some new buying developed after the first of the month, and while it was not in large quantities, was sufficient to take the slack out of the market for the next week or 10 days. Stocks of kerosene are extremely low in Louisiana and Arkansas and refiners are accepting no business except from their regular customers.

Distillates

Demand for stove distillates has continued to increase steadily each

A GRAIGRENE

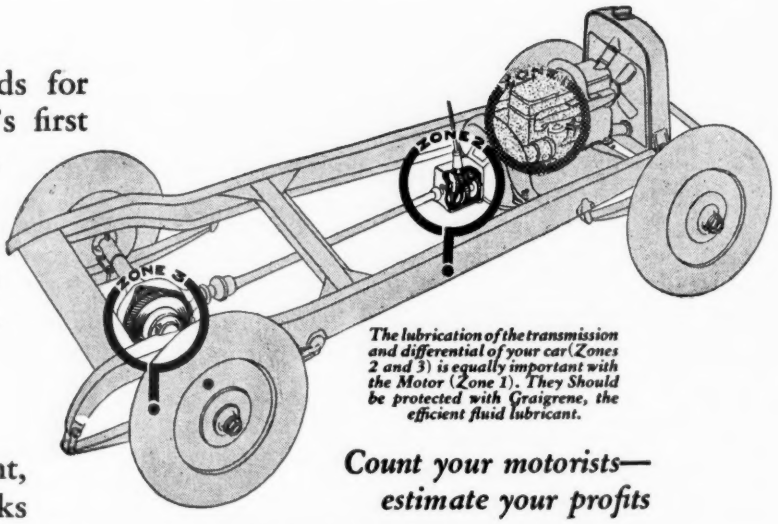
[PRONOUNCED GREY-GREEN]

winter is coming!

PREPARE NOW

for big cold-weather *GRAIGRENE* profits!

Cold winds are trade winds for Graigrene dealers. Autumn's first frost is a signal for your cash register to start gathering in the long green with Graigrene. Graigrene becomes vitally necessary when the mercury tumbles.



The lubrication of the transmission and differential of your car (Zones 2 and 3) is equally important with the Motor (Zone 1). They Should be protected with Graigrene, the efficient fluid lubricant.

Always flows freely

Graigrene, a fluid lubricant, never freezes up, never packs at gear sides, never "channels out" leaving precious gear teeth unprotected—not even at 60 degrees below zero. Gears are never hard to shift if they're bathed in Graigrene. Graigrene always flows freely—provides a film of protective lubricant *all the time.*

Automotive engineers are advising motorists against heavy grease. Graigrene advertisements are spreading the gospel. Car owners are learning the need for Graigrene, especially in cold weather.

Count your motorists—estimate your profits

Every motorist in your territory is a LIVE Graigrene prospect. Each one needs 8 pounds of Graigrene; trucks and busses take 40 pounds. *And you make* 50% *profit per pound.* Count "your owners"—estimate your profits.

Prepare for the Graigrene demand. Write us today—or 'phone your nearest jobber. Don't wait until the other fellow grabs this easy money. You can pay your rent with Graigrene. Get after this business right away.

GET THE LONG GREEN WITH GRAIGRENE

Manufactured by

Viscosity Oil Company

Established 1894

W. D. SIMMONS, President

Central Manufacturing District, CHICAGO

Phone Yards 7196

week since the middle of August. The beginning of the distillate season is just around the corner and many jobbers who felt they could not buy in the summer now are making purchases and ordering out goods on contract since cooler weather has come to much of the distillate consuming territory.

Refiners have been forced to increase their distillate production to handle the larger volume of orders. This increase in production has come at a time when the price of kerosenes was firm at levels somewhat above the relationship which normally exists between distillates and the burning oils.

Virtually no 38-40 straw distillate was available in Oklahoma after Sept. 1 at 3 cents a gallon. The price moved up steadily until on Aug. 8 refiners were obtaining 3.25 to 3.375 cents a gallon for that grade, and from 3 to 3.125 cents a gallon for 36-38 straw distillate.

Gas Oil

Several refiners lately have been receiving inquiries for straw gas oil of low cold test, which would indicate buyers are going to push this grade of oil again this year for heating purposes. In former years only a small amount of straw zero gas oil has been manufactured in Oklahoma, and the bulk of the production has been under contract. Indications so far are that this season will be no different from the others.

Fuel Oils

With crude runs at high levels, fuel oil production continued to exceed consumption with the resultant steady increase in stocks. Despite this situation, however, refiners in Kansas, Oklahoma and north Texas apparently are not forcing their goods on the market in order to relieve their storage. Several refiners in these areas have adopted a definite storage program and there may be considerable significance in the fact that the majority of these refiners have cracking units.

Neutrals and Cylinders

Bright stocks have been exceedingly active in most quarters with buyers preparing for their winter requirements. Prices have been strong at unchanged levels. A majority of refiners report their stocks of bright stock are lower than they have been in several months, and a few are out of the market except for their regular trade.

Neutral oils were unchanged.

Wax

Buyers have been actively seeking wax in Oklahoma with only moderate success. Refiners report they are sold up for the month and a few have accepted a little business into October. One company sold a large quantity of wax this week at 5 cents a pound. The prevailing quotation is 5 cents, with one or two refiners quoting 5.125 to 5.25 cents.

Chicago Resale Market

Gasoline Buying Is Heavier

Staff Special
CHICAGO, Sept. 8

A RESUMPTION of spot buying by jobbers in this territory brought the Chicago resale gasoline market back to a firmer basis as the week closed Sept. 8. Most sellers reported considerably improved demand during the past two or three days. One refiner reported receiving more inquiries, of which a large number were for rush shipment, the past 3 days than for the previous week.

A refiner, who came back into the spot market on Sept. 4, after being out of the market for awhile, reported Sept. 8 that he was again sold up and would be out of the market for some time. Reports from most quarters indicated that gasoline consumption over Labor Day, had been very heavy.

U. S. Motor gasoline sold throughout the week at widely varying prices. Most sales of full specification 58-60 U. S. Motor gasoline on Sept. 8 were made at 9.625 to 9.75 cents. Practically all sales of Oklahoma goods were at 9.75 cents but, in some cases resale agents offered it at a lower figure. Gasoline out of Texas was selling from 9.25 to 9.625 cents, Group 3 freight basis, but in most cases the cheaper goods did not come up to U. S. Motor specifications. A refiner, who has been an active purchaser of gasoline for some time, said Sept. 7 that he was finding difficulty in buying Oklahoma gasoline under 9.75 cents, and that in most cases he was having to pay higher price for goods out of differential territory than earlier in the week.

The statement was made in several quarters that clearing up uncertainty regarding the new Quantity Discount Agreement would be a strong influence in holding the spot tank car market firm.

High test gasolines were in steady demand this week. One seller reported receiving an increased number of inquiries from northern Minnesota and Wisconsin. Prices of all grades were generally unchanged throughout the week. Reports of export buying in Oklahoma and Texas during closing days of the week helped to hold these commodities steady. The 60-62, 437 e. p. grade sold mostly at 9.875 to 10 cents; 60-62, 400 e. p. at 10.25 to 10.375 cents and the 64-66, 375 e. p. grade at 11 cents flat.

Kerosene demand was holding up well as the week closed. Most of the trade reported a good seasonal demand and several refiners were still behind on shipments. Little change was apparent in prices with the 41-43 w.w. grade moving mostly at 6.50 cents all week. Sales at 6.625 and 6.375 cents were also reported, although those at the latter figure were few.

Little change was apparent in the heavy oil market this week. Distillates continued the strongest product while gas and fuel oils were steady and apparently marking time until cold weather. Several sellers reported a steady demand from industrial concerns.

Distributors of domestic burner oils reported burner owners active in signing contracts for their winter's supply of oil. One distributor reported his business increased 100 per cent over last August.

Reports of price cutting on domestic burner oils were numerous but this was mostly centered on the heavier fuel oils which are used mostly by small industrials and large apartment houses. Contracts have been closed on an 18-20 fuel as low as 4 cents delivered, according to reports received. However, most companies are quoting around 4.75 cents on this grade of goods.

Distillate prices were unchanged over the week with 38-40 straw bringing 3.125 to 3.25 cents. Gas oil prices also were unchanged. The 32-36 ordinary dark gas oil sold at 2.50 to 2.625 cents; 32-36 dark zero at 2.625 to 2.75 cents; and the 32-36 straw zero grade at 2.75 to 3 cents.

Fuel oil prices were generally unchanged with 28-30 selling at $0.80 to $0.85; 24-26 at $0.625 to $0.675; low sulfur 18-22 fuel at $0.575 to $0.625 and the high sulfur 18-22 fuel at $0.525 to $0.55.

Shower periods are forecast by Chicago weather bureau for the beginning and again at close of next week in the Standard of Indiana territory. Weather will be cool the first part of the week with temperatures rising towards the close over most of the territory.

D. W. Reed, general manager of the East Coast Oil Co., S. A., Southern Pacific subsidiary in Mexico, has returned to Los Angeles headquarters after a business trip to Tampico.

Clyde M. Bennett, president of the Trinidad Oil Fields Operating Co., Inc., and formerly vice president of the Louisiana Oil Refining Corp., visited Shreveport on his way to Hot Springs, Ark., with his family for a vacation. Mr. Bennett now makes headquarters in New York City.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Sept. 10	Prices Sept. 4	Prices Aug. 27
52-54 Napthha	11.50 –12.00	11.50 –12.00	11.00 –11.75
54-56 Naphtha	11.50 –12.00	11.75 –12.00	11.50 –11.75
58-60 U.S. Motor 437 e.p.	12.00 –12.50	12.00 –12.50	12.00 –12.25
60-62 400-410 e.p. gasoline	12.50 –13.00	12.75 –13.00	12.50 –12.75
64-66 390 e.p. gasoline	13.625–14.00	13.75 –14.00	13.50 –13.75
68-70 Str-run gas. 350-360 e.p.	15.00	14.50 –15.50	14.50 –15.00
OHIO (Quotation of S. O. Ohio.)			
58-60 U.S.Motor,delivered in Ohio, tax to be added	13.25	13.00	No spot quotations
OKLAHOMA			
48-50 540 e.p. naphtha	†9.00 – 9.125	†9.00 – 9.125	†9.00 – 9.125
50-52 450 e.p. naphtha	†9.00 – 9.125	†9.00 – 9.125	†9.00 – 9.125
56-58 450 e.p. gasoline	9.375– 9.50	9.375– 9.50	9.25 – 9.50
58-60 450 e.p. gasoline	9.50	9.50	9.25 – 9.50
64-66 390 e.p. gasoline	10.50 –10.75	10.50 –10.75	10.50 –10.75
68-70 350-360 e.p. gasoline	11.00	11.00	11.00
OKLAHOMA (Weighted Average Prices)			
58-60 U.S. Motor, 437 e.p.	9.7414	9.7458	9.6861
60-62 437 e.p. gasoline	10.1875	9.9464	10.0000
60 62 400 e.p. gasoline	10.4063	10.3333	10.3333
64-66 375 e.p. gasoline	No sales	11.0000	No sales

Current week's prices in the above weighted average price table are effective on Saturday, Sept. 8, instead of Sept. 10. The two previous weeks' prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the respective columns. Sept. 10 weighted average prices are published on page 99 of this issue.

KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	9.875	9.875	9.875–10.00
60-62 400 e.p. gasoline	10.50	10.50	10.50
64-66 375 e.p. gasoline	10.75	10.75	10.75
NORTH TEXAS			
48-52 450 e.p. naphtha	†8.75	†8.75	†9.00
56-58 450 e.p. gasoline	†8.75	†8.75	†9.00
58-60 450 e.p. gasoline	†8.75 – 9.00	†8.75 – 9.00	†9.125
58-60 U.S. Motor 437 e.p.	9.25	9.125– 9.25	9.375– 9.50
60-62 400 e.p. gasoline	10.00	10.00 –10.25	10.25
64-66 390 e.p. gasoline	10.25	10.375	10.375
64-66 375 e.p. gasoline	10.50	10.50 –10.625	10.50–10.625
68-70 350-360 e.p. gasoline	10.75 –11.00	10.75 –11.00	†1.00
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	10.25	10.25 –10.50	**10.50
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	9.75	9.75	9.75
58-60 450 e.p. gasoline	10.00	10.00	10.00
58-60 U.S. Motor 437 e.p.	10.25	10.25	10.50
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p	9.00 –12.50	9.00 –12.50	9.00 –12.50
58-61 U.S. Motor 437 e.p.	9.50 –13.50	9.50 –13.50	9.50 –13.50
42-45 Eng. dis. 445-480 e.p.	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note. End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	8.75 – 9.00	9.25 – 9.75	10.625–10.75
Grade A, 72-79.9, 90% Recovery	8.75 – 9.00	9.25 – 9.75	10.625–10.75
Grade BB, 84-92, 85% Recovery	8.75	9.25 – 9.75	10.625–10.75
Grade B, 76-83.9, 85% Recovery	8.75	9.25 – 9.75	10.625–10.75
Grade C, 80-92, 78% Recovery	8.50	9.25 – 9.75	10.625–10.75
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	8.75 – 9.00	9.25 – 9.75	10.625–10.75
Grade A, 72-79.9, 90% Recovery	8.75 – 9.00	9.25 – 9.75	10.625–10.75
Grade BB, 84-92, 85% Recovery	8.75	9.25 – 9.75	10.625–10.75
Grade B, 76-83.9, 85% Recovery	8.75	9.25 – 9.75	10.625–10.75
Grade C, 80-92, 78% Recovery	8.50	9.25 – 9.75	10.625–10.75
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†9.50	†10.25	†10.75–11.00
Grade BB	†9.25	†10.25	†10.75–11.00
Grade C	†9.00	†10.25	†10.75–11.00
CALIFORNIA			
75-85, 375-390 e.p. blend	7.00 – 7.50	7.00 – 7.50	6.75 – 7.00

MOTOR FUEL BLENDS

OKLAHOMA			
64-66 Blend 437 e.p.	9.25 – 9.50		none available

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	7.75 – 8.25	7.50 – 8.00	7.00 – 7.25
46 w.w. kerosene	8.125– 8.75	8.00 – 9.00	7.50 – 7.75
47 w.w. kerosene	8.75 – 9.00	8.75 – 9.00	7.75 – 8.25
300 mineral seal	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75

†Prices nominal **††Only one refiner quoting** ***Quotations only**

OKLAHOMA	Prices Sept. 10	Prices Sept. 4	Prices Aug. 27
41-43 w.w. kerosene	6.50 – 6.75	6.50 – 6.75	6.50 – 6.625
42-44 w.w. kerosene	7.00 – 7.25	7.00 – 7.25	6.875– 7.125
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	6.875– 7.00	6.875– 7.00	6.75
42-44 w.w. kerosene	7.25	7.25	7.00 – 7.25
NORTH TEXAS			
40-42 w.w. kerosene	6.00	6.00	6.00
41-43 w.w. kerosene	6.25	6.25	6.25
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	7.00	7.00	6.75 – 7.00
ARKANSAS (Arkansas destination only)			
42-44 kerosene	7.25	7.00 – 7.25	6.75
CALIFORNIA			
38-40 w.w. kerosene	5.75 – 6.50	5.75 – 6.50	5.75 – 6.50

NEUTRAL OIL

Vis.				
PENNSYLVANIA		(Viscosity at 70°F.)		
200	No. 3 Assoc. Filt.	30.00 –32.00	30.00 –32.00	30.00 –32.00
180	No. 3 Assoc. Filt.	29.00 –30.00	29.00 –30.00	29.50 –30.00
150	No. 3 Assoc. Filt.	24.50 –26.50	24.25 –26.50	25.00 –26.50
		(Non Viscous)		
34	Grav. 330-340 Flash	6.75 – 9.00	6.75 – 9.00	7.50 – 9.00
36	Min. Neut, 300-305 Flash	6.00 – 8.50	6.00 – 8.50	6.00 – 8.50
****OKLAHOMA**				
Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150	No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150	No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180	No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180	No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180	No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200	No. 3	9.625–11.00	9.625–11.00	9.625–11.00
200	No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200	No. 5	8.50 –10.00	8.50 –10.00	8.50 –10.00
220	No. 3	12.50 –13.00	12.50 –13.50	12.50 –13.50
220	No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220	No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240	No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240	No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240	No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280	No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280	No. 4	15.25	15.25	15.25
280	No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300	No. 5-6	17.00	17.00	17.00
GULF COASTAL				
Vis.	Color	(Viscosity at 100°F , pour test 0)		
100	No. 2 Unfilt. Pale	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
200	No. 3 Unfilt. Pale	10.50 –10.75	10.50 –10.75	10.50 –10.75
300	No. 3 Unfilt. Pale	11.50 –11.75	11.50 –11.75	11.50 –11.75
500	No. 3½ Unfilt. Pale	13.50 –13.75	13.50 –13.75	13.50 –13.75
750	No. 4 Unfilt. Pale	15.75 –16.00	15.75 –16.00	15.75 –16.00
200	No. 5½ Red Oil	8.50 – 8.75	8.50 – 8.75	8.50 – 8.75
300	No. 5½ Red Oil	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
500	No. 6 Red Oil	11.00 –11.25	11.00 –11.25	11.00 –11.25
750	No. 6 Red Oil	13.75 –14.00	13.75 –14.00	13.75 –14.00
CALIFORNIA				
Vis.	Color	(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300	No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450	No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550	No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600	No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200	No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300	No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400	No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500	No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600	No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700	No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

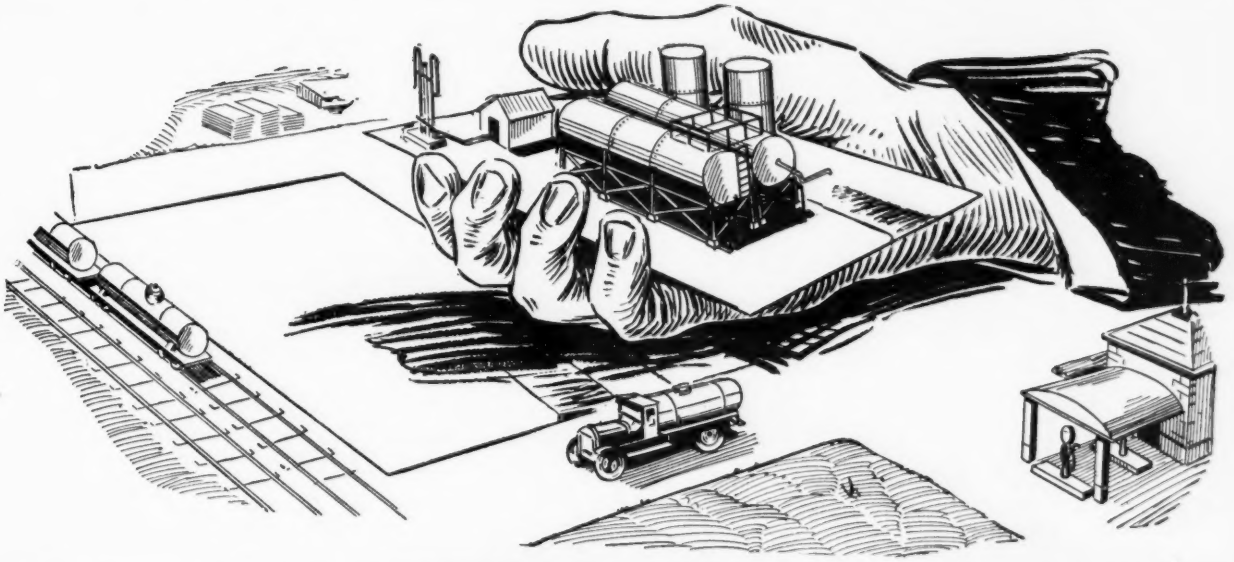
CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis.at 210° Brt.St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis.at210° Brt.St.	25.00 –26.00	25.00 –26.00	25.00 –26.00
600 E.St.140-150Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.00 –10.00	8.00 –10.00	8.00 –10.00
600 St. Ref. Dark Green	6.00 – 8.00	6.00 – 8.00	6.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	13.00 –13.50	13.25 –14.00	13.00 –14.00
650 Steam Refined	14.50 –16.50	14.50 –16.50	14.50 –16.50
600 Flash	18.50 –19.00	18.50 –19.00	18.00 –19.50
625 Flash	27.50 –29.00	27.50 –29.00	26.00 –29.00
600 Warren E	19.00 –20.00	19.00 –20.00	19.00 –20.00
600 Oil City E	17.00 –18.50	17.00 –18.50	18.00 –18.50
600 D Filtered	††24.00	23.50 –24.00	24.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No.8color	36.50 –37.00	36.50 –37.00	36.50
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	34.50 –35.00	34.50 –35.00	34.50

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

****Represents both sales and quotations**

You Furnish the Ground



Leader Will Furnish the COMPLETE BULK PLANT

YOU simply furnish a plot of your property or lease and tell us the nature and capacity of the plant wanted. Leader will draw up the plans, furnish all of the equipment, and install it if you wish.

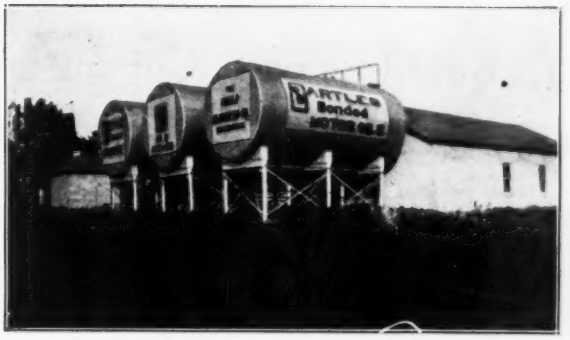
Everything in One Shipment. All of your equipment will come in one shipment. This includes Tanks, Rotary Pumps, Tank Car Unloading Rack, Truck Tank Loading Racks, all Valves, Pipe and Fittings.

The Equipment is the finest that can be bought. It includes Leader Rivet-Weld Tanks—with a perpetual guarantee against leaks. Hot driven boiler rivets are used in the joints, and all seams are electrically arc welded. If a Leader Rivet-Weld Tank ever leaks, Leader will take care of it.

Installation. You can install the equipment yourself, or, if you prefer, a Leader Field Crew will handle the installation from start to finish. This means that Leader will pour the concrete, unload all of the equipment and set it in position, and, finally, pipe up the job complete. If you have gasoline and kerosene on the track when the plant is finished, Leader will pump off these cars for you. It's a service of action, not words.

The whole story is told in Bulletin 103 which shows 22 proposed Bulk Plant Layouts. We have a copy of Bulletin 103 for you. It will be sent at your request.

HERE'S A TYPICAL CASE



BARTLES-MAGUIRE BULK PLANT

Above is one of the plants that Leader has furnished and installed for Bartles-Maguire. After the most recent installations Bartles-Maguire wrote as follows:

Gentlemen:

This is to advise you that your Mr. Hawkins has completed the installation of the two bulk plants for us located at Watertown and Jefferson, Wis.

We wish to thank you for the very satisfactory manner in which these installations have been handled.

BARTLES-MAGUIRE OIL CO.

IT'S A SERVICE OF ACTION, NOT WORDS.

LEADER IRON WORKS

2112 N. JASPER STREET - - - DECATUR, ILLINOIS

21 East 40th Street, New York, N. Y.

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Sept. 10	Prices Sept. 4	Prices Aug. 27
Per pound, New York			
122-124 white crude scale	5.25	5.00 – 5.25	5.00 – 5.25
124-126 white crude scale	5.25	5.25	5.00 – 5.125
OKLAHOMA			
**124-126 White Crude Scale	5.00	5.00	4.75
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	4.50 – 4.75	4.625– 5.00	4.625– 4.875
30-34 fuel oil	4.25	4.25 – 4.50	4.25 – 4.50
28-32 fuel oil	4.125– 4.25	4.125– 4.375	4.25 – 4.375
OKLAHOMA			
38-40 straw distillate	3.25 – 3.375	3.25	3.00 – 3.25
36-38 straw distillate	3.00 – 3.125	3.00	2.875– 3.00
32-36 gas oil, straw	†2.50 – 2.75	†2.50 – 2.75	†2.50 – 2.75
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
28-30 fuel oil (in bbls.)	$0.85 –$0.875	$0.85 – 0.875	$0.85 – 0.875
26-28 fuel oil (in bbls.)	$0.675–$0.725	$0.675– 0.725	$0.675– 0.725
24-26 fuel oil (in bbls.)	*$0.65–$0.675	*$0.65 – 0.675	**$0.65– 0.675
22-26 fuel oil (in bbls)	*$0.575–$0.625	*$0.575– 0.625	**$0.575–0.625
18-22 fuel oil (in bbls.)	*$0.55 –$0.60	*$0.55 – 0.60	**$0.55– 0.60
16-18 fuel oil (in bbls.)	*$0.55	*$0.55	**$0.55
14-16 fuel oil (in bbls.)	*$0.55	*$0.55	**$0.55
KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
36-38 straw distillate	3.125– 3.375	3.125– 3.375	3.125– 3.375
32-36 gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
24-26 fuel oil	*$0.75 –$0.80	$0.75 – 0.80	*$0.75– 0.80
18-22 fuel oil	*$0.70	$0.70	*$0.70
NORTH TEXAS			
38-40 straw distillate	3.125	3.00 – 3.125	3.00
32-36 gas oil, cracked	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 gas oil, uncracked	2.375– 2.50	2.375– 2.50	2.375– 2.50
24-26 fuel oil (in bbls.)	$0.55	$0.525– 0.55	$0.525– 0.55

GULF COASTAL	Prices Sept. 10	Prices Sept. 4	Prices Aug. 27
Fuel (in bbls.)	$1.20 –$1.25	$1.20 –$1.25	$1.20 –$1.25
Gas oil	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.625– 2.875	2.625– 2.875	2.625– 2.875
32-36 gas oil, straw	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
16-20 fuel oil (in bbls.)	$0.70	$0.70	$0.70
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
28-32 gas oil	2.75	2.75	2.75
Road Oil	$1.15	$1.15	$1.15
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$1.00 –$1.20	$1.00 –$1.20	$1.00 –$1.20
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars ½c to ¾c per pound less.) Quotations of only one refiner on all grades except red petrolatum which is quoted by two refiners.

Snow White	8.50	8.50	8.50
Lily White	7.50	7.50	7.50
Cream White	6.50	6.50	6.50
Light Amber	3.50	3.50	3.50
Amber	3.25	3.25	3.25
Red	2.375– 3.00	2.375– 3.00	2.375 – 3.00

PETROLEUM COKE

****OKLAHOMA**

(Per ton in car lots)

Lump	$4.50 – 5.00	$4.50 –$5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents Both Sales and Quotations

Retail Price Cutting Wanes In California Market

Staff Special

LOS ANGELES, Sept. 8

ALTHOUGH there is plenty of gasoline in California, with refineries running around 70 per cent of capacity, there does not seem to be any disposition on the part of most of the companies to go after sea borne business. One company is selling U. S. Motor around 8.50 cents, while others are asking up to 9 cents. Tanker rates to east coast hold around 70 cents, including canal tolls, for clean bottoms.

Export gasoline buyers are holding back for developments. They are watching Gulf and New York prices very closely and it is understood in Los Angeles that California grade U. S. Motor is now being offered delivered in New York at 10.50 cents by one company at least.

Fuel oil market is inactive. No sales for export have been reported recently, with most companies asking 70 cents and up for offshore movement. Some of the smaller refiners have some distress fuel for sale, with one report that a few cars were moved at 55 cents. But the purchase of 25 to 30 cars would take the low priced stuff off the market. The fuel for sale below 65 cents in tank cars is distress oil.

Gasoline in tank cars is moving at 9 to 12.50 cents without tax, although a little gasoline is being shipped into Utah at 8.50 cents to meet competition. It is also reported that some gasoline is moving into Phoenix, Ariz., at less than 9 cents, due to the low service station price in that area. Shipments to points in California are firmly held at higher figures, with most of the companies asking 5 cents under official service station price, tax paid.

The local gasoline situation has cleared up to a large extent until very few signs are out offering gasoline below the Standard service station price. Wilshire Oil Co. dealers are offering gasoline at 2 cents under, while dealers for all other companies are holding to the regular price, as far as is generally known.

Uncracked gas oil is very scarce, and one contract has been signed recently for a cargo to move in about 6 weeks at $1.10. It is doubted if another cargo could be bought in September for October movement at less than $1.20.

There is little kerosene moving on spot orders and previous quotations prevail. Other products are without change during the past few weeks.

Special Alloys To Be Used In New Gasoline Plant

TULSA, Sept. 10.—Special alloy metals will be used in a new gasoline plant to be built in the Church & Fields pool near McCamey, Texas, by the Phillips Petroleum Co. The plant has been designed to handle 50 million cubic feet of sour gas per day. The gas has a hydrogen sulfide content running as high as 10 per cent and is extremely poisonous.

The company plans to use special aluminum heat exchangers to avoid corrosion. Compressor exhaust valves and other parts subject to corrosion will be of special alloys and bubble caps of absorbers will be of ascoloy. Fuel for the twelve 400-horsepower engines will be purified of hydrogen sulfide before use. Special precautions will be taken to protect employees.

Gasoline Shipments Heavy in Penna.

CLEVELAND, Sept. 8.—Quotations in the western Pennsylvania refinery market were steady through the first full week of September. Gasoline shipments were heavy. Kerosene was in good demand. Wax was scarce. Bright stocks were much wanted. Steam refined and cylinder stocks were unchanged.

Activity in gasoline was confined mainly to filling orders placed late in August for early September delivery. Spot market demand was relatively light. Many refiners reported being sold up, and some behind in shipments; these sellers being out of the market until the fore or the latter part of next week.

U. S. Motor gasoline quotations continued to be made at 12 to 12.50 cents, with the majority of refiners asking 12.25 cents and more were asking 12 cents. Higher gravity gasolines were unchanged.

Kerosene prices were more stable this week, following the brisk rise of Sept. 1. The 45 w.w. kerosene was quoted at 7.75 to 8.25 cents. Higher gravities had a wider spread; 46 w.w. was 8.125 to 9 cents and 47 w.w. 8.75 to 9 cents.

Wax was 5.25 cents. Some New York buyers were offering 5.30 cents. Goods were scarce.

The bright stock market remained unchanged at 36.50 to 37 cents for light and 34.50 to 35 cents for dark. Refiners have not changed these quotations for more than three weeks. Cylinder stocks were unchanged also.

Some refiners report more activity in fuel oils. On the whole fuel oil and viscous neutral demand continued light. Quotations were unchanged generally, with the exception of 36-40 fuel oil, which was available at 4.50 cents.

* * *

Refiner to Advance Petrolatums

CLEVELAND, Sept. 10.—An advance of .125 cent on petrolatum about the middle of this week was announced today by a refiner in the western Pennsylvania market. The new prices are to be 8.625 cents on snow white; 7.625 cents on lily white; 6.625 cents on cream white; 3.625 cents on light amber; 3.375 cents on amber and 3.125 cents on red.

Gulf Lubes Continue Strong

HOUSTON, Sept. 10.—Manufacturers report continued strength in the Gulf Coastal lubricant market. Prices are unchanged, however, from those prevailing Sept. 3. Inquiries are coming into the market for winter requirements of zero cold test oils. Some shipments have already been made to the Great Lakes region.

Wax Market Still Shows Strength

NEW YORK, Sept. 8.—Wax markets forged ahead again this week under the stimulus of fair buying. Prices for all grades of scale and fully refined wax advanced 0.125 to 0.25-cent, both at New York and New Orleans.

The active foreign inquiry reported for the past several weeks showed no signs of subsiding and generally speaking still higher prices are considered likely should demand continue at the present rate.

As early as Tuesday of this week one important broker reported the sale of a fair sized lot of white crude scale for December shipment at 5.50 cents, f.a.s. New York. Buyers at the time were bidding 5.25 cents freely for September goods apparently with little success. Sales of small lots were reported at 5.25 and 5.375 cents but toward the end of the week the sale of an additional 200 tons, 50 tons a month from September to December, was consummated at 5.50 cents. Spot goods also were being held at this figure Friday and Saturday.

New Orleans sellers likewise said they were having no trouble in getting 5.50 cents for September scale. The volume of goods sold for shipment from this point, however, was smaller. Offerings at the same time were extremely limited.

Demand for fully refineds continued active in both markets. Sellers also continued to report limited supplies of these grades and prices were conceded to be largely nominal. The 125-127 A.m.p. fully refined grade sold at 5.875 cents at New Orleans and was held at 5.875 to 6 cents at New York. The sale of a small lot of 128-130 A.m.p. was reported at 6 cents in the former market. At New York this grade was quoted at 6.25 cents a pound.

Prices for the higher melting points also were raised 0.25-cent; 133-135 A.m.p. goods were quoted at 7.25 to 7.50 cents at New York and 135-137 A.m.p. at 7.75 cents with one company asking 8 cents a pound for this grade.

M. G. Gulley, formerly engaged in economic and geological studies for the executive department of the Marland Oil Co. of Delaware, at Ponca City, is now in Michigan for the Eastern Gulf Oil Co., reporting to K. C. Heald, staff geologist, at Pittsburgh.

J. W. Selby, long connected with the Louisiana Oil Refining Corp., at Shreveport and in the field, is now chief scout of the Roxana Petroleum Corp., at central division headquarters, Dallas.

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NATIONAL PETROLEUM NEWS
700 Penton Bldg.
Cleveland, Ohio

Gulf Export Markets Are Slow; Kerosene Firmer

Staff Special
NEW YORK, Sept. 8

GULF export markets spent another week in the doldrums with trading reported at a minimum. Gasoline prices showed a slightly easier tendency while kerosene continued on the upgrade. Prices for heavy oils showed some improvement but buying in this section of the market was virtually at a standstill.

There were inquiries for gasoline in the market this week, but unusually attractive prices from the west coast finally commanded sufficient interest from European buyers to develop in actuality new competition for the Gulf.

There has been a good deal of talk among the trade recently of supplying foreign buyers with California gasoline in view of the relatively lower prices prevailing out there, should prices at the Gulf continue at around their present levels. European buyers in the past have demanded unblended gasoline, of which there is little on the Pacific coast, and for this reason it had been felt that much of the talk about California entering the picture as a disturbing factor would result in nothing more than talk.

Several intercompany transactions have been closed recently with California gasoline being supplied in instances where Mid-Continent goods has always obtained the business in the past. A total of five cargoes of gasoline were said to have been sold in the past two weeks for shipment to the United Kingdom.

The first open market transaction to be switched to the coast was negotiated this week, however. A French buyer entered the market early in the week for approximately 50,000 barrels of U. S. Motor and 64-66, 375 end point gasoline for early October loading. The bulk of the cargo is to consist of the former grade.

The business was closed Saturday by the New York representative of a leading California refiner with U. S. Motor selling at 8.625 cents and 64-66, 375 end point at 10.375 cents, f.o.b. California. Considering the usual 0.75-cent freight differential between California and the Gulf on Continental trade, these prices figure 9.375 cents and 11.125 cents at the Gulf. Several Gulf suppliers bid 10 cents and 12 cents, respectively, for the business.

At least one other French buyer was in the market definitely this week. His inquiry called for approximately 50,000 barrels of 64-66, 375 end point gasoline only, for October delivery, and he indicated he would take either California or Mid-Continent stuff. One or two other buyers were said to be in the market tentatively, although details of their requirements were withheld.

Kerosene buying failed to improve materially, although prices were firmly held. Several suppliers interpret the Bureau of Mines' figures for July, which showed stocks of this commodity considerably smaller than a year ago, as a decidedly bullish factor for kerosene. Water white was quoted at 7.75 cents by all suppliers this week and prime white at 6.75 cents. One or two who indicated 0.125 cent less for prime white, advanced their quotations this week.

There was little change noted in heavy oil prices. Distress cargoes of Grade C, however, were absent from the market this week, and virtually all suppliers were asking $0.65 a barrel for this oil. Buyers who last week paid $0.65 were indicating a maximum of $0.62 as the price they would be willing to pay this week. Bunker prices were generally unchanged at $0.80 to $0.90 a barrel.

Contract Movement Better After Holiday Demand

Staff Special
NEW YORK, Sept. 8

SPOT gasoline markets continued relatively slow along the Atlantic seaboard the past week. Movement under contracts was reported a shade better following large withdrawals from stocks over Labor Day. Tank car prices in the leading markets were generally unchanged.

Kerosene prices remained firm and gas oil, under the stimulus of better demand, was held more in line with list prices. Some improvement was noted in bunker markets and adherence to posted prices was more largely the rule than during the past few weeks.

The market for U. S. Motor gasoline at New York harbor opened Tuesday with the majority of sellers holding firm at 11.75 cents. Spot buying in this market following the three-day holiday was a bit disappointing but most companies reported receiving occasional orders for small lots.

Persistent reports were heard, as the week advanced, that U. S. Motor gasoline was being offered to the jobbing trade by a few sellers at 11.625 cents and in one instance at 11.50 cents. Few actual sales at these prices could be confirmed, however, and by far the majority of sellers quoted 11.75 cents and reported receiving sufficient orders to discount the market representation of lower priced goods.

Sellers in the vicinity of Philadelphia were more in line in their ideas of prices this week. One large company with terminal in this district advanced his prices for both U. S. Motor and California grade to 11.75 cents, the price maintained by the majority of other companies. One large refiner in this district continued to ask 12 cents, f.o.b. refinery, for U. S. Motor.

With higher prices prevailing in western Pennsylvania, sellers at Philadelphia reported their market had been enlarged considerably. Prices in the former market have been running 0.25 to 0.5-cent behind the seaboard for the most of this year, but now the old time differential of 0.25 to 0.5-cent above seaboard markets has been re-established.

The Baltimore market was in much the same shape as New York and Philadelphia, although sellers in this vicinity reported more active jobbing demand. One large refiner at Baltimore reported receiving orders, contract and spot, for better than 100 cars of gasoline on Tuesday following Labor Day, all of which were accepted on the basis of 11.75 cents for U. S. Motor and California goods.

New England markets were featureless. Jobbing demand for gasoline was reported slow but the majority of sellers in this district held

(*Continued on Page* 118)

Tanker Rates

NEW YORK, Sept. 10.—Approximate tanker freight rates in the following trades are, to Continental ports, in shillings per ton of 2240 pounds, British Sterling; to American ports, cents per barrels:

	Crude &/or Fuel Oil	Refined
Calif. to U. K. or Continental ports*	25/6	26/-
Gulf to U.K. or Continental ports*	14	15/6
North Atlantic to U.K. or Continental ports*	11	12/6
Calif. to North Atlantic ports (not E. of N. Y.)	50-55c	65-70c
**Gulf and North Atlantic ports (not E. of N. Y.)	16-17c	25-27c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations and sales.)

	Sept. 10	Sept. 4	Aug. 27
U.S. Motor gasoline, New York harbor	11.75	11.75	11.75
U.S. Motor gasoline, Philadelphia	11.75 –12.00	11.50 –12.00	11.50 –12.00
U.S. Motor gasoline, Portland	†12.25-12.75	†12.25 –12.75	†12.75
U.S. Motor gasoline, Boston district	*12.25	*12.25	*12.25
U.S. Motor gasoline, Providence district	*12.25	*12.25	*12.25
U.S. Motor gasoline, Baltimore	11.75	11.75	11.75
U.S. Motor gasoline, Norfolk	11.75	11.75	11.75
U.S. Motor gasoline, Charleston	11.50	11.50	11.50
U.S. Motor gasoline, Savannah	11.25	11.25	11.25
U.S. Motor gasoline, Jacksonville	11.25	11.25	11.25
California U.S. Motor gasoline, New York Harbor	12.00	12.00	12.00
California U.S. Motor gasoline, Baltimore	11.75	11.75	11.75
California U.S. Motor gasoline, Philadelphia	11.75	11.50 –11.75	11.50 –11.75
Water white kerosene, New York Harbor	8.50	8.50	8.50
Water white kerosene, Philadelphia	8.50	8.50	8.50
Water white kerosene, Baltimore	8.50	8.50	8.00 – 8.50
28-34 gas oil, New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
28-34 gas oil, Boston district	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
36-40 furnace oil, New York harbor	6.00	6.00	6.00
36-40 furnace oil, Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Grade C bunker oil, New York harbor	$1.05	$1.05	$1.05
Grade C bunker oil, Boston district	$1.05	$1.05	$1.05 –$1.10
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.
*Minimum of 13.50c delivered.
†13.50 to 14c delivered

MEDICINAL OILS

Russian 885-890 s.g. 325-330 vis	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
Russian 870-875 s.g., 150-155 vis	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
Russian 860-865 s.g., 80-85 vis	$0.65 – 0.75	$0.65 – 0.75	$0.65 – 0.75

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	Sept. 10	Sept 4.	Aug. 27
U. S. Motor gasoline	26.90	26.90	26.90
43-45 150 w.w. kerosene	18.65	18.65	18.65
42-44 110 s.w. kerosene	17.40	17.40	17.40
CYLINDER OILS			
Bright stock, dark	42.00 –43.00	42.00 –43.00	41.00 –42.00
600 D filtered	31.00 –32.00	31.00 –32.00	30.00 –32.00
600 Warren E filtered	26.00 –27.00	26.00 –27.00	26.00
600 s.r. unfiltered	21.00	21.00	20.00 –21.00
650 s.r. unfiltered	22.50 –23.00	22.50 –23.00	22.50 –23.00
600 flash, s.r.	26.00	26.00	25.00 –26.00
630 flash, s.r.	34.00 –36.00	34.00 –36.00	34.00 –36.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	19.50	19.50	19.50
250 vis. No. 6 color	18.50	18.50	18.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.50	19.50	19.50
100 vis. No. 2¼ color	15.50	15.50	15.50
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	34.50	34.50	34.50
500 vis. No. 6½ color	32.50	32.50	32.50
400 vis. No. 7¼ color	30.50	30.50	30.50
300 vis. No. 6 color	29.50	29.50	29.50
200 vis. No. 3¼ color	20.00	20.00	20.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)
WHITE CRUDE SCALE (In barrels)

	Sept. 10	Sept. 4	Aug. 27
122-124 A.m.p.	5.50	5.25 – 5.375	5.00
124-126 A.m.p.	5.50	5.25 – 5.375	5.00
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	5.875	5.625– 5.75	5.375– 5.50
125-127 A.m.p.	5.875– 6.00	5.75 – 5.875	5.50 – 5.625
128-130 A.m.p.	6.25	6.00 – 6.25	5.625– 5.75
130-132 A.m.p.	6.50 – 6.75	6.25 – 6.50	6.00
133-135 A.m.p.	7.25 – 7.50	7.25	7.00
135-137 A.m.p.	7.75	7.50	7.25 – 7.375
YELLOW CRUDE SCALE			
124-126 A.m.p.	5.25 – 5.375	5.00 – 5.125	4.875–5.00

***Prices nominal.**

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

GASOLINE	Sept. 10	Sept. 4	Aug. 27
U. S. Motor	10.00	10.00 –10.25	*10.25
60-62, 400 e.p.	10.75	10.75 –11.00	11.00
61-63, 390 e.p.	11.25	11.50	11.50 –11.75
64-66, 375 e.p.	12.00	12.00 –12.25	*12.25
U. S. Motor, cases (cargoes)	$1.90	$1.95	$1.95
64-66, cases (cargoes)	$2.10	$2.10	$2.10

***Sales only.**

KEROSENE			
44 water white	7.75	7.75	7.75
41-43 prime white	6.75	6.75	*6.625
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55

***Sales only.**

DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
*30-32 translucent gas oil	4.00	4.00	4.00
Grade C bunker oil	$0.80 –$0.90	$0.80 –$0.90	$0.80 –$0.90
Grade C bunker oil, cargoes	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70

***Less than ½ of 1% sulfur.**

MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$1.00 –$1.02	$1.00 –$1.02	$1.00 –$1.02
Grade C bunker oil, for bunkering purposes, taxes paid	$1.10	$1.10	$1.10

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.: cold test 0)
(Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	5.75	5.75	5.75
200 vis. No. 3 unfiltered pale	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
300 vis. No. 3 unfiltered pale	9.50 – 9.875	9.50 – 9.875	9.50 – 9.875
500 vis. No. 3½ unfiltered pale	10.75 –11.50	10.75 –11.50	10.75 –11.50
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200 vis. No. 5-6 red oil	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
300 vis. No. 5-6 red oil	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
500 vis. No. 5-6 red oil	9.75 –10.50	9.75 –10.50	9.75 –10.50
750 vis. No. 5-6 red oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
1200 vis. No. 5-6 red oil	14.50 –16.50	14.50 –16.50	14.50 –16.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Sept. 10	Sept. 4	Aug. 27
Gasoline, U. S. Motor, 53-55 Gravity	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
Gasoline, U. S. Motor, blends and special cuts	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
Gas Oil, 30-34, per barrel	$1.10 –$1.20	$1.10 –$1.20	$1.10 –$1.20
Diesel Oil, 27 plus, per barrel	$0.95 –$1.10	$0.95 –$1.10	$0.95 –$1.10
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18 per barrel	$0.70 –$1.00	$0.70 –$1.00	$0.70 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.50 –$1.60	$1.50 –$1.60	$1.50 –$1.60

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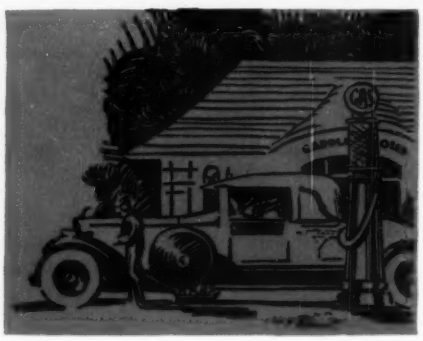

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41-43 W. W. Kerosene
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32-36 Gas Oil Uncracked
22-26 Fuel Oil (Cushing or 24-26 Fuel Oil Blackwell)

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Week's Price Changes

Tank Wagon Markets

Gasoline Changes

Standard of Kentucky—T.w. and s.s. prices gasoline advanced 1 cent, Florida, **Sept. 6.** Last previous change in Florida was a 1 to 2 cent advance on July 30.

T.w. and s.s. prices gasoline reduced 2 cents, Birmingham, to 18 cents and 20 cents respectively, including 4 cent state tax, **Sept. 6.**

Magnolia Petroleum—T.w. and s.s. prices of gasoline were cut 2 cents at San Antonio on Aug. 22, instead of advanced 1 cent, as reported in Aug. 29 issue of NATIONAL PETROLEUM NEWS. Correct price on Aug. 22 was 15 cents t.w., and 18 cents s.s., including 3 cent state tax.

* * *

Kerosene Changes

Standard of Kentucky—Kerosene advanced 1 cent at Savannah, Jacksonville, Tampa and Pensacola, **Sept. 3.**

Standard of Louisiana—Kerosene prices advanced 1 cent, through territory, **Sept. 7.**

Explosion at Bulk Plant Kills One Man

CHICAGO, Sept. 8.—Offices of Geo. C. Peterson Co., 208 South La Salle street, were closed on the afternoon of Sept. 6 while the members of the firm attended the funeral of George Schar, formerly an employee of the company at the north side Chicago bulk plant. He was killed by an explosion, early Labor day.

Trucks are loaded at this station from gauge tanks, mounted above the loading platform on the compartment that houses the electric equipment. It was a damp, foggy morning and Schar was filling the gauge tanks.

Vapors forced from the tanks by the inflowing gasoline settled on the ground. When one tank was filled an electric switch was thrown, igniting the vapors on the ground.

The flash reached the gauge tanks. At least one of the three exploded. All were wrecked. The property loss was not great. The pump house was back in use in three days. Authorities say they have installed two automatic power ventilators in the pump house, that start when the pump starts. The switch has been moved to another part of the plant.

Charles Brownmiller, purchasing agent at Tampico for the Cortez-Atlantica companies, subsidiaries in Mexico of the Atlantic Refining Co., is spending his vacation in Philadelphia and New York.

R. S. Rhoades, formerly of Denver, now is doing geological work for the Majestic Oil Corp., Security building, Long Beach, California.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for 1927, 1926, 1925, 1924 arranged for quick reference)

These Prices in Effect Sept. 10, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	17	2	19	20	14
Newark, N. J.	17	2	19	20	14
Annapolis, Md.	17	4	21	23	14
Baltimore, Md.	17	4	21	23	11
Cumberland, Md.	17	4	21	23	14
Washington, D. C.	17	2	19	21	14
Danville, Va.	17	5	22	*	14
Norfolk, Va.	14	5	19	20	14
Richmond, Va.	17	5	22	24	14
Roanoke, Va.	17	5	22	24	14
Petersburg, Va.	17	5	22	24	14
Charleston, W. Va.	17	4	21	23	14
Keyser, W. Va.	17	4	21	23	14
Parkersburg, W. Va.	17	4	21	23	14
Wheeling, W. Va.	17	4	21	23	14
Charlotte, N. C.	17	4	21	23	14
Hickory, N. C.	17	4	21	23	14
Mt. Airy, N. C.	17	4	21	23	14
Salisbury, N. C.	17	4	21	23	14
Charleston, S. C.	17	5	22	24	14
Columbia, S. C.	17	5	22	24	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	18	0	18	*20	15
Albany, N. Y.	18	0	18	21	15
Buffalo, N. Y.	18	0	18	20	15
Rochester, N. Y.	18	0	18	20	13
Syracuse, N. Y.	18	0	18	20	15
Boston, Mass.	18	0	18	20	15
Augusta, Me.	18	4	22	24	15
Manchester, N. H.	18	4	22	24	15
Burlington, Vt.	18	3	21	23	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York, selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	18	*	18	*23	15
Philadelphia, Pa.	18	*	18	*23	15
Allentown, Pa.	18	*	18	*23	15
Erie, Pa.	18	*	18	*23	15
Scranton, Pa.	18	*	18	*23	15
Altoona, Pa.	18	*	18	*23	15
Dover, Del.	18	3	21	23	15
Wilmington, Del.	18	3	21	23	15
Providence, R. I.	18	2	20	22	15
Boston, Mass.	18	0	18	20	15
Springfield, Mass.	18	0	18	20	15
Worcester, Mass.	18	0	18	20	15
Hartford, Conn.	18	2	20	22	14
New Haven, Conn.	18	2	20	22	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Ashland, Ky.	17	5	22	24	15.5
Catlettsburg, Ky.	17	5	22	24	15.5
Lexington, Ky.	16	5	21	23	15.5
Louisville, Ky.	16	5	21	23	14
Covington, Ky.	17	5	22	22	15.5
Clarksdale, Miss.	17	4	21	23	13
Gulfport, Miss††	18.5	4	22.5	24.5	14
Jackson, Miss.	17	4	21	23	14.5
Natchez, Miss.	16.5	4	20.5	22.5	14
Vicksburg, Miss.	16.5	4	20.5	22.5	14
Birmingham, Ala.	14	4	18	20	16
Mobile, Ala‡	18	4	22	24	15
Montgomery, Ala.*	19	4	23	25	16.5
Atlanta, Ga.	18	4	22	24	†16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	24	†16.5
Savannah, Ga.	17	4	21	21	†15.5
Jacksonville, Fla.	18	5	23	25	14.5
Miami, Fla.	19	5	24	26	15.5
Tampa, Fla.	18	5	23	25	14.5
Pensacola, Fla.**	19	5	24	26	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	15	0	15	17	12
Decatur, Ill.	15.2	0	15.2	17.2	12.1
E. St. Louis, Ill.	14.1	0	14.1	16.35	11.2
Joliet, Ill.	15.4	0	15.4	17.4	12.3
Peoria, Ill.	15.2	0	15.2	17.2	12.1
Quincy, Ill.	15.2	0	15.2	17.2	11.9
Indianapolis, Ind.	15.2	3	18.2	20.2	13.2
Evansville, Ind.	15	3	18	20	13
South Bend, Ind.	15.4	3	18.4	20.4	13.4
Detroit, Mich.	15.8	3	18.8	20.8	13.7
Grand Rapids, Mich.	15.7	3	18.7	20.7	13.6
Saginaw, Mich.	15.9	3	18.9	20.9	13.8
Green Bay, Wis.	15.6	2	17.6	19.6	12.4
Madison, Wis.	15.3	2	17.3	19.3	12.1
Milwaukee, Wis.	15.1	2	17.1	19.1	11.9
La Crosse, Wis.	16.2	2	18.2	20.2	13
Minneapolis, Minn.	16.2	2	18.2	20.2	12.9
Duluth, Minn.	16.5	2	18.5	20.5	12.9
Mankato, Minn.	16.1	2	18.1	20.1	12.7
Des Moines, Ia.	15.5	3	18.5	20.5	12.3
Davenport, Ia.	15.5	3	18.5	20.5	12.3
Sioux City, Ia.	15.1	3	18.1	20.1	11.9
Mason City, Ia.	15.5	3	18.5	20.5	12.3
St. Louis, Mo.	*14.6	2	16.6	18.9	11.3
Kansas City, Mo.	†15.9	2	17.9	19.9	10.6
St. Joseph, Mo.	†15.5	2	17.5	19.5	11.2
Fargo, N. D.	17.9	2	19.9	21.9	14.9
Grand Forks, N. D.	18.2	2	20.2	22.2	15.2
Minot, N. D.	17.9	2	19.9	21.9	14.9
Pierre, S. D.	16.5	4	20.5	22.5	13.9
Huron, S. D.	16.5	4	20.5	22.5	13.9
Wichita, Kans.	13.8	2	15.8	17.8	10.8
Bartlesville, Okla.	13.5	3	16.5	18.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline is ½c for 750 gals. or more a month; 1c for 2,000 gals. or more a month; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month. All discounts adjusted annually.

*Includes city tax of ½c.

†Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	16	3	19	22	14.5
Pueblo, Colo.	16	3	19	22	14.5
Grand Junc., Colo.	19.5	3	22.5	25.5	18
Casper, Wyo.	16	3	19	22	13
Cheyenne, Wyo.	17	3	20	23	14.5
Butte, Mont.	20.5	3	23.5	26.5	19
Helena, Mont.	20.5	3	23.5	26.5	19
Salt Lake City, Utah.	18.5	3½	22	25	17
Boise, Ida.	20.5	4	24.5	27.5	19
Twin Falls, Ida.	20.5	4	24.5	27.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	16	5	21	23	14
Alexandria, La.	15	2	17	19	†16
Baton Rouge, La.	14	2	16	18	†14.5
Lake Charles, La.	15.5	2	17.5	19.5	†16
New Orleans, La.	*15.5	2	*17.5	*19.5	†16
Shreveport, La.	15.5	2	17.5	19.5	†15
Lafayette, La.	15	2	17	19	†15.5
Bristol, Tenn.	18	3	21	23	15
Chattanooga, Tenn.	17.5	3	20.5	22.5	16
Knoxville, Tenn.	18	3	21	23	16
Nashville, Tenn.	17	3	20	22	16
Memphis, Tenn.	14	3	17	19	15

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
All Ohio points	16	3	19	20	14

S. O. NEBRASKA

Omaha, Neb.	15.25	2	17.25	19.25	12.25
McCook	16.75	2	18.75	20.75	13.75
Norfolk	15.75	2	17.75	19.75	12.75
North Platte	16.75	2	18.75	20.50	13.50
Scottsbluff	16.75	2	18.75	20.75	13.25

MAGNOLIA PETROLEUM

Muskogee, Okla.	15	3	18	20	11
Oklahoma City	15	3	18	20	11
Tulsa, Okla.	14	3	17	19	11
Fort Smith, Ark.*	16	*2	18	20	13
Little Rock, Ark.	16	5	21	23	13
Texarkana, Ark.*	14.5	*2	16.5	20.5	13
Dallas, Tex.	14	2	16	20	12
Fort Worth, Tex.	14	2	16	19	12
Houston, Tex.	14	2	16	20	15
San Antonio, Tex.	12	2	14	17	11
El Paso, Tex.	15	2	17	20	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		20	....

*Includes 2c state tax. †Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
ONTARIO					
Toronto	20.5	3	23.5	27	22
Ottawa	20.5	3	23.5	27	22
Cochrane	25.5	3	28.5	..	27
Ft. William	23.5	3	26.5	30	23.5
MANITOBA					
Winnipeg	22.5	3	25.5	29	22.5
SASKATCHEWAN					
Regina	27	3	30	34	27
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	22.5	3	25.5	29	22.5
BRITISH COLUMBIA					
Vancouver	21	3	24	28	22
QUEBEC					
Montreal	21.5	5	26.5	30	22
Quebec City	22.5	5	27.5	31	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	23.5	3	26.5	30	25
Moncton	23.5	3	26.5	30	25
NOVA SCOTIA					
Halifax	23.5	5	28.5	32	25
Sydney	23.5	5	28.5	32	25
PRINCE EDWARD ISLAND					
Charlottetown	23.5	5	28.5	32	25

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/60c on both; Nebraska, 3/50 to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for 1927, 1926, 1925, 1924 arranged for quick reference)

These Prices in Effect Sept. 10, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	17	2	19	20	14
Newark, N. J.	17	2	19	20	14
Annapolis, Md.	17	4	21	23	14
Baltimore, Md.	17	4	21	23	11
Cumberland, Md.	17	4	21	23	14
Washington, D. C.	17	2	19	21	14
Danville, Va.	17	5	22	*	14
Norfolk, Va.	14	5	19	20	14
Richmond, Va.	17	5	22	24	14
Roanaoke, Va.	17	5	22	24	14
Petersburg, Va.	17	5	22	24	14
Charleston, W. Va.	17	4	21	23	14
Keyser, W. Va.	17	4	21	23	14
Parkersburg, W. Va.	17	4	21	23	14
Wheeling, W. Va.	17	4	21	23	14
Charlotte, N. C.	17	4	21	23	14
Hickory, N. C.	17	4	21	23	14
Mt. Airy, N. C.	17	4	21	23	14
Salisbury, N. C.	17	4	21	23	14
Charleston, S. C.	17	5	22	24	14
Columbia, S. C.	17	5	22	24	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	18	0	18	*20	15
Albany, N. Y.	18	0	18	21	15
Buffalo, N. Y.	18	0	18	20	15
Rochester, N. Y.	18	0	18	20	13
Syracuse, N. Y.	18	0	18	20	15
Boston, Mass.	18	0	18	20	15
Augusta, Me.	18	4	22	24	15
Manchester, N. H.	18	4	22	24	15
Burlington, Vt.	18	3	21	23	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York, selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	18	*	18	*23	15
Philadelphia, Pa.	18	*	18	*23	15
Allentown, Pa.	18	*	18	*23	15
Erie, Pa.	18	*	18	*23	15
Scranton, Pa.	18	*	18	*23	15
Altoona, Pa.	18	*	18	*23	15
Dover, Del.	18	3	21	23	15
Wilmington, Del.	18	3	21	23	15
Providence, R. I.	18	2	20	22	15
Boston, Mass.	18	0	18	20	15
Springfield, Mass.	18	0	18	20	15
Worcester, Mass.	18	0	18	20	15
Hartford, Conn.	18	2	20	22	14
New Haven, Conn.	18	2	20	22	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Ashland, Ky.	17	5	22	24	15.5
Catlettsburg, Ky.	17	5	22	24	15.5
Lexington, Ky.	16	5	21	23	15.5
Louisville, Ky.	16	5	21	23	14
Covington, Ky.	17	5	22	22	15.5
Clarksdale, Miss.	17	4	21	23	13
Gulfport, Miss††	18.5	4	22.5	24.5	14
Jackson, Miss.	17	4	21	23	14.5
Natchez, Miss.	16.5	4	20.5	22.5	14
Vicksburg, Miss.	16.5	4	20.5	22.5	14
Birmingham, Ala.	14	4	18	20	16
Mobile, Ala‡	18	4	22	24	15
Montgomery, Ala.*	19	4	23	25	16.5
Atlanta, Ga.	18	4	22	24	†16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	24	†16.5
Savannah, Ga.	17	4	21	21	†15.5
Jacksonville, Fla.	18	5	23	25	14.5
Miami, Fla.	19	5	24	26	15.5
Tampa, Fla.	18	5	23	25	14.5
Pensacola, Fla.**	19	5	24	26	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	15	0	15	17	12
Decatur, Ill.	15.2	0	15.2	17.2	12.1
E. St. Louis, Ill.	14.1	0	14.1	16.35	11.2
Joliet, Ill.	15.4	0	15.4	17.4	12.3
Peoria, Ill.	15.2	0	15.2	17.2	12.1
Quincy, Ill.	15.2	0	15.2	17.2	11.9
Indianapolis, Ind.	15.2	3	18.2	20.2	13.2
Evansville, Ind.	15	3	18	20	13
South Bend, Ind.	15.4	3	18.4	20.4	13.4
Detroit, Mich.	15.8	3	18.8	20.8	13.7
Grand Rapids, Mich.	15.7	3	18.7	20.7	13.6
Saginaw, Mich.	15.9	3	18.9	20.9	13.8
Green Bay, Wis.	15.6	2	17.6	19.6	12.4
Madison, Wis.	15.3	2	17.3	19.3	12.1
Milwaukee, Wis.	15.1	2	17.1	19.1	11.9
La Crosse, Wis.	16.2	2	18.2	20.2	13
Minneapolis, Minn.	16.2	2	18.2	20.2	12.9
Duluth, Minn.	16.5	2	18.5	20.5	12.9
Mankato, Minn.	16.1	2	18.1	20.1	12.7
Des Moines, Ia.	15.5	3	18.5	20.5	12.3
Davenport, Ia.	15.5	3	18.5	20.5	12.3
Sioux City, Ia.	15.1	3	18.1	20.1	11.9
Mason City, Ia.	15.5	3	18.5	20.5	12.3
St. Louis, Mo.	*14.6	2	16.6	18.9	11.3
Kansas City, Mo.	†15.9	2	17.9	19.9	10.6
St. Joseph, Mo.	†15.5	2	17.5	19.5	11.2
Fargo, N. D.	17.9	2	19.9	21.9	14.9
Grand Forks, N. D.	18.2	2	20.2	22.2	15.2
Minot, N. D.	17.9	2	19.9	21.9	14.9
Pierre, S. D.	16.5	4	20.5	22.5	13.9
Huron, S. D.	16.5	4	20.5	22.5	13.9
Wichita, Kans.	13.8	2	15.8	17.8	10.8
Bartlesville, Okla.	13.5	3	16.5	18.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline is ½c for 750 gals. or more a month; 1c for 2,000 gals. or more a month; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month. All discounts adjusted annually.

*Includes city tax of ½c.

†Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	16	3	19	22	14.5
Pueblo, Colo.	16	3	19	22	14.5
Grand Junc., Colo.	19.5	3	22.5	25.5	18
Casper, Wyo.	16	3	19	22	13
Cheyenne, Wyo.	17	3	20	23	14.5
Butte, Mont.	20.5	3	23.5	26.5	19
Helena, Mont.	20.5	3	23.5	26.5	19
Salt Lake City, Utah	18.5	3½	22	25	17
Boise, Ida.	20.5	4	24.5	27.5	19
Twin Falls, Ida.	20.5	4	24.5	27.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	16	5	21	23	14
Alexandria, La.	15	2	17	19	†16
Baton Rouge, La.	14	2	16	18	†14.5
Lake Charles, La.	15.5	2	17.5	19.5	†16
New Orleans, La.	*15.5	2	*17.5	*19.5	†16
Shreveport, La.	15.5	2	17.5	19.5	†15
Lafayette, La.	15	2	17	19	†15.5
Bristol, Tenn.	18	3	21	23	15
Chattanooga, Tenn.	17.5	3	20.5	22.5	16
Knoxville, Tenn.	18	3	21	23	16
Nashville, Tenn.	17	3	20	22	16
Memphis, Tenn.	14	3	17	19	15

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
All Ohio points	16	3	19	20	14

S. O. NEBRASKA

Omaha, Neb.	15.25	2	17.25	19.25	12.25
McCook	16.75	2	18.75	20.75	13.75
Norfolk	15.75	2	17.75	19.75	12.75
North Platte	16.75	2	18.75	20.50	13.50
Scottsbluff	16.75	2	18.75	20.75	13.25

MAGNOLIA PETROLEUM

Muskogee, Okla.	15	3	18	20	11
Oklahoma City.	15	3	18	20	11
Tulsa, Okla.	14	3	17	19	11
Fort Smith, Ark.*	16	*2	18	20	13
Little Rock, Ark.	16	5	21	23	13
Texarkana, Ark.*	14.5	*2	16.5	20.5	13
Dallas, Tex.	14	2	16	20	12
Fort Worth, Tex.	14	2	16	19	12
Houston, Tex.	14	2	16	20	15
San Antonio, Tex.	12	2	14	17	11
El Paso, Tex.	15	2	17	20	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		20	....

*Includes 2c state tax. †Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	20.5	3	23.5	27	22
Ottawa	20.5	3	23.5	27	22
Cochrane	25.5	3	28.5	..	27
Ft. William	23.5	3	26.5	30	23.5
MANITOBA					
Winnipeg	22.5	3	25.5	29	22.5
SASKATCHEWAN					
Regina	27	3	30	34	27
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	22.5	3	25.5	29	22.5
BRITISH COLUMBIA					
Vancouver	21	3	24	28	22
QUEBEC					
Montreal	21.5	5	26.5	30	22
Quebec City	22.5	5	27.5	31	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	23.5	3	26.5	30	25
Moncton	23.5	3	26.5	30	25
NOVA SCOTIA					
Halifax	23.5	5	28.5	32	25
Sydney	23.5	5	28.5	32	25
PRINCE EDWARD ISLAND					
Charlottetown	23.5	5	28.5	32	25

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/60c on both; Nebraska, 3/50 to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Crude Oil Prices (in Effect Sept. 10)

(Crude prices for years 1924-1925-1926-1927 in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.20
Bradford District Oil in National Transit Lines (Bradford District)	3.20
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.10
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.10
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.00
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.85
Keister Grade in National Transit Lines (Butler Co.)	1.20
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.45
Corning Grade in Buckeye Pipe Lines (Ohio)	1.80
Corning, O., heavy grade	1.70
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.70
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.65

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective July 27, 1928

Wooster	$1.67	Princeton	$1.55
Lima	1.60	Illinois	1.55
Waterloo	1.20	Plymouth	1.28
Indiana	1.37	West Kentucky	1.48

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$2.00
Oil Springs	2.07

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.
(In Oklahoma, Kansas, North and East Central Texas)

Effective July 26, 1928

Below 25	$0.60	35-35.9	$1.31
25-25.9	0.67	36-36.9	1.36
26-26.9	0.74	37-37.9	1.41
27-27.9	0.81	38-38.9	1.46
28-28.9	0.88	39-39.9	1.51
29-29.9	0.95	40-40.9	1.56
30-30.9	1.02	41-41.9	1.61
31-31.9	1.09	42-42.9	1.66
32-32.9	1.16	43-43.9	1.71
33-33.9	1.21	44 and above	1.76
34-34.9	1.26		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

July 26, same schedule as Prairie.

Mirando, Tex	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

July 26, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 25	$0.60	26-26.9	0.74
25-25.9	0.67	27-29.9	0.75
30-30.9			0.90
31-31.9			1.05
Glasscock, Crane, Upton, Winkler Counties			0.65
Chalkfield (Howard Co.)			0.80
Iatan district			0.93
Corsicana heavy			1.00

Carter Oil Co.

(Oklahoma and Kansas)

July 26, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Hutchinson and Carson Counties:

Below 32	$0.69	38-38.9	$1.06
32-32.9	0.76	39-39.9	1.11
33-33.9	0.81	40-40.9	1.16
34-34.9	0.86	41-41.9	1.21
35-35.9	0.91	42-42.9	1.26
36-36.9	0.96	43-43.9	1.31
37-37.9	1.01	44 and above	1.36

Wheeler County:

Below 30	$0.65	37-37.9	$1.11
30-30.9	0.72	38-38.9	1.16
31-31.9	0.79	39-39.9	1.21
32-32.9	0.86	40-40.9	1.26
33-33.9	0.91	41-41.9	1.31
34-34.9	0.96	42-42.9	1.36
35-35.9	1.01	43-43.9	1.41
36-36.9	1.06	44 and above	1.46

Gray County:

Below 29	$0.68	37-37.9	1.21
29-29.9	0.75	38-38.9	1.26
30-30.9	0.82	39-39.9	1.31
31-31.9	0.89	40-40.9	1.36
32-32.9	0.96	41-41.9	1.41
33-33.9	1.01	42-42.9	1.46
34-34.9	1.06	43-43.9	1.51
35-35.9	1.11	44 and above	1.56
36-36.9	$1.16		

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, and Pecos Counties	$0.65

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective July 26, 1928

Below 28	$0.81	36-36.9	$1.36
28-28.9	0.88	37-37.9	1.41
29-29.9	0.95	38-38.9	1.46
30-30.9	1.02	39-39.9	1.51
31-31.9	1.09	40-40.9	1.56
32-32.9	1.16	41-41.9	1.61
33-33.9	1.21	42-42.9	1.66
34-34.9	1.26	43-43.9	1.71
35-35.9	1.31	44 and above	1.76

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	.90
Bellevue	1.25
*Urania, La.	.85
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La. Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6 by La. Oil Refg. Corp.

Aug. 8 The Texas Co., same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.67; 26-26.9, $0.74; 27-27.9, $0.81.

Aug. 7 Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Aug. 2, 1928

Below 28	$0.75	30-30.9	$0.87
28-28.9	0.79	31-31.9	0.91
29-29.9	0.84	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

Contract Movement Better After Holiday Demand

(Continued from Page 112)

their prices firm. U. S. Motor in the Boston and Providence districts was quoted on the basis of 12.25 cents, f.o.b. refinery or terminal, with a minimum of 13.50 cents delivered. Goods was available at the same prices in Portland, although two large sellers were asking 0.5-cent higher.

One large refiner with terminal at Jacksonville, Fla. was reported to be quoting 11 cents for U. S. Motor gasoline, although the majority of companies in this district as well as at Savannah were asking 11.25 cents, f.o.b. seaboard.

Rapidly advancing kerosene prices in western Pennsylvania has given rise to much speculation among the trade as to the probability of further advances in seaboard prices. Water white kerosene was quoted generally at 8.50 cents in tank cars at New York, Philadelphia and Baltimore, although this price was said to be largely nominal in view of the extreme scarcity of goods available for prompt shipment. Demand for kerosene has shown some increase but active fall buying is yet to come.

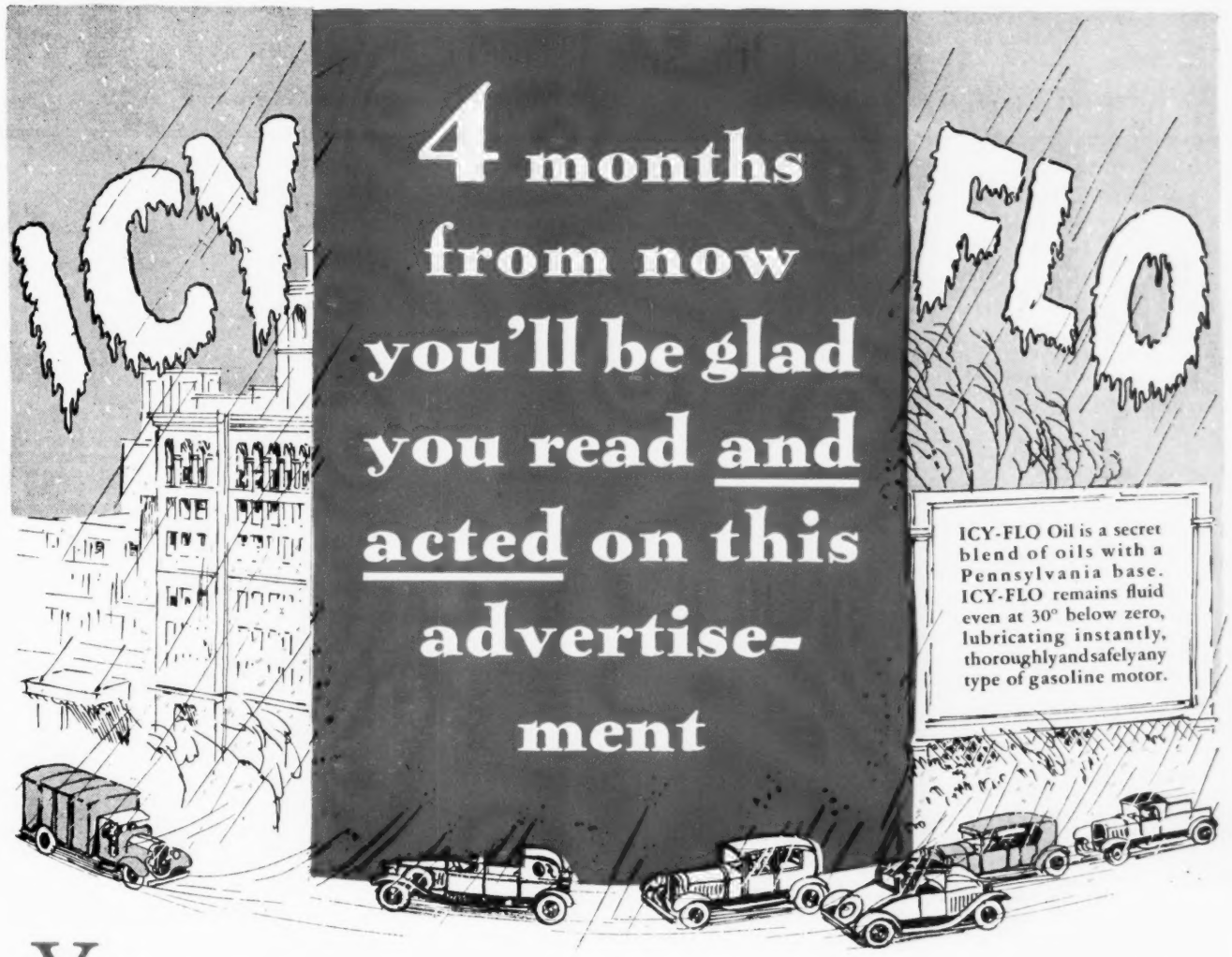
There was considerably less shading of 4.75 cents reported for gas oil in tank cars this week. Occasional sales at 4.625 cents to industrial users were said to have been made but transactions at this price are more the exception than the rule. Most companies were asking 4.75 to 5 cents for 28-34 gravity goods. Domestic burning oil dealers are said to be pretty well covered on contract.

Shading of posted prices for bunker oil, which has been quite common the past few weeks, was reported almost entirely eliminated this week, most companies adhering to the posted price of $1.05, f.o.b. refinery, in New York harbor.

Western Pennsylvania Jobbers Organize

WASHINGTON, Pa., Sept. 10.—Completion of the organization of western Pennsylvania Independent Oil Men's Association was expected the evening of Sept. 10 with election of officers at Rappe Hotel, Greensburg, according to N. J. Christopher, Christopher Independent Oil Co. here. R. A. Overholser, executive secretary of the state association, with headquarters at Harrisburg, was expected to attend.

Burt E. Hull, president of The Texas Pipeline Co., Houston, returned in August from a business trip to New York City.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B

Crude Oil Prices (in Effect Sept. 10)

(Crude prices for years 1924-1925-1926-1927 in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A.....$1.20	*Grades B.....$1.15
‡Grades B (light crude):	
35-35.9.....$1.37	38-38.9.....$1.43
36-36.9..... 1.39	39-39.9..... 1.45
37-37.9..... 1.41	40 and above... 1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective July 26, 1928)

‡Salt Creek 29-29.9	$0.95
" " 30-30.9	1.02
" " 31-31.9	1.09
" " 32-32.9	1.16
" " 33-33.9	1.21
" " 34-34.9	1.26
" " 35-35.9	1.31
" " 36-36.9	1.36
" " 37 and above	1.41
Elk Basin	1.48
Grass Creek light	1.48
Big Muddy	1.33
Lance Creek	1.48
Rock Creek	1.33
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.48
‡Cat Creek, Mont	1.48
Sunburst, Mont	1.65
‡Hogback, N. Mex	1.48
Artesia, N. Mex	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85	$ .85
15-15.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
16-16.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
17-17.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
18-18.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
19-19.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
20-20.9	.85	.85	.85	....	.85	.85	....	....	.77	.77	.77	.77	.86	.85	.85
21-21.9	.89	.89	.89	....	.88	.88	.89	....	.79	.79	.79	.79	.89	.86	.86
22-22.9	.93	.93	.93	....	.91	.91	.92	....	.82	.82	.82	.82	.92	.87	.87
23-23.9	.97	.97	.97	....	....	.94	.95	....	.86	.86	.85	.85	.95	.90	.90
24-24.9	1.01	1.01	1.01	1.01	....	.97	.98	....	.90	.90	.88	.88	.98	.93	.94
25-25.9	1.05	1.05	1.05	1.05	....	1.00	1.01	....	.95	.95	.91	.91	1.01	.95	.98
26-26.9	1.09	1.09	1.09	1.09	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	.97	1.02
27-27.9	1.13	1.13	1.13	1.13	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	1.10
29-29.9	1.21	....	1.21	1.21	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	.....	1.14
30-30.9	1.25	....	1.25	1.25	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	1.18
31-31.9	1.30	....	....	1.30	....	....	1.25	....	1.28	1.28	1.14	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	....	1.30	....	1.34	1.34	1.18	....	....	....	1.28
33-33.9	....	....	....	1.41	....	.....	1.35	....	1.40	1.40	1.22	....	....	....	....
34-34.9	....	....	.....	1.47	....	.....	1.40	....	....	1.46	1.26	....	....	....	....
35-35.9	....	....	....	1.53	....	....	1.45	....	....	....	1.30	....	....	....	....
36-36.9	....	....	....	1.59	....	....	1.50	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	....	....	1.55	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	....	....	1.60	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	....	....	1.65	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	....	....	....	....	....	....	....	....	....	....	....

*Union Oil Co. posts same prices in all above fields as Standard except in Montebello and Wheeler Ridge. It also posts Elwood Terrace at same prices as Rosecrans—Dominguez and also posts Santa Maria (Orcutt) and Ventura.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

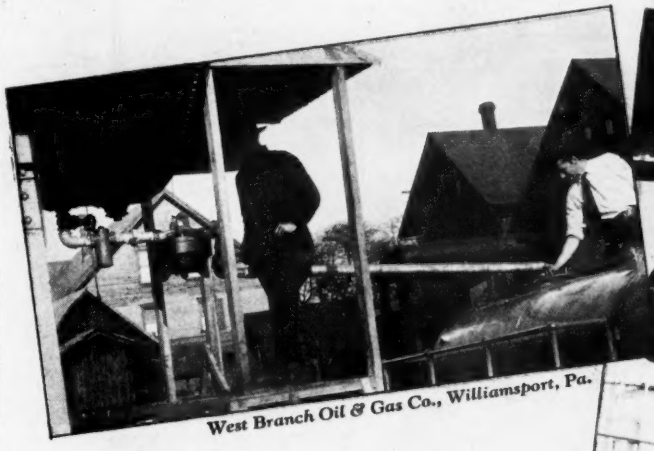
Refiners' Supplies

	Sept. 10	Sept. 4
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, ...cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars.....cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, ...cwt.	$0.70-0.75	$0.70-0.75
Sal Soda wks.....	$0.90	$0.90
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton.....	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.....	$18.50	$18.50
Sulfur, flowers of.....cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks.....lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	8.75	8.75

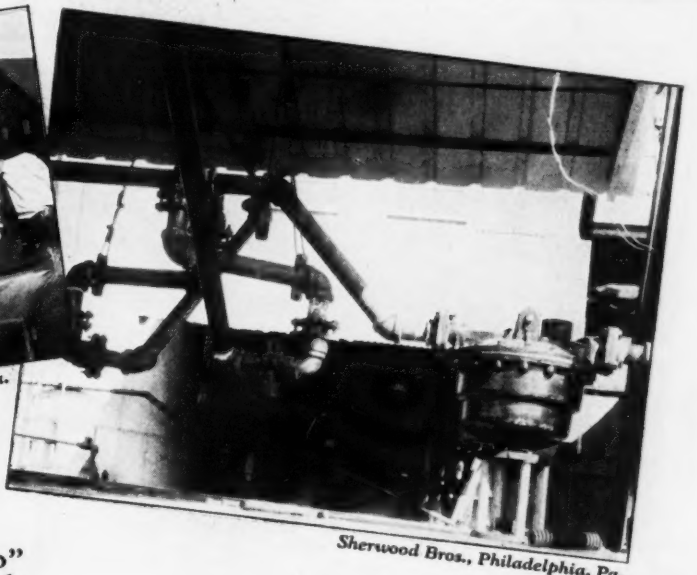
Compounders' Supplies

Vegetable Oils		
Linseed carloads, spot....lb.	9.60	9.60
Tanks, spot.....	8.80	8.80
Soya Bean, Tanks, coast, lb.	9.75	9.50
Oleic Acid		
Distilled, tanks.....lb.	9.00	9.00
Distilled, bbls.....lb.	9.75	9.75
Saponified, tanks.....lb.	9.25	9.25
Saponified, bbls.....lb.	10.00	10.00
Lard Oils		
Prime Winter Strained....lb.	16.25	15.75
Extra Winter Strained...lb.	13.25	13.00
Extra.....lb.	12.75	12.50
Extra No. 1.....lb.	12.50	12.25
No. 1.....lb.	11.375	11.50
No. 2.....lb.	11.375	11.125
Tallow oil.....lb.	11.75	11.375
Neatsfoot Oil		
Pure, bbls.....lb.	15.25	15.25
Extra, bbls.....lb.	12.75	12.50
No. 1 bbls.....lb.	12.00	11.75
Cold Pressed.....lb.	18.50	18.50
Fish Oils		
Menhaden Oil		
Light Pressed ..... gal.	60	60
Light Pressed, tank cars, N. Y. .....gal.	54-56	54-56
White bleached.....gal.	65-66	65-66
Yellow bleached.....gal.	66-68	66-68
Whale, extra winter bleached, ...gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y.....gal.	47	52
Steam distilled turpentine, Savannah.....gal.	42	47
Gum turpentine, N. Y....gal.	53	53.50
Gum turpentine, f.o.b. cars Savannah.....gal.	49	46
Wood Rosin F, N. Y.....bbl.	$7.80	$8.30
Wood Rosin F, Savn'h..bbl.	$7.00	$7.50
Gum Rosin B, N. Y.....bbl.	$8.80	$9.15
Gum Rosin B, f.o.b. cars Savannah ..... bbl.	$8.05	$7.80
Rosin oil, pure.....gal.	60	57
Rosin oil, compounded...gal.	50	47
Pine Tar		
Kiln burnt.....bbl.	$12.50-14.00	$12.50-14.00
Retort.....bbl.	$13.50-15.50	$13.50-15.50
Alcohol		
Denatured, Formula 5, in bbls., per gal.....	54-61	54-61

*Nominal.



West Branch Oil & Gas Co., Williamsport, Pa.



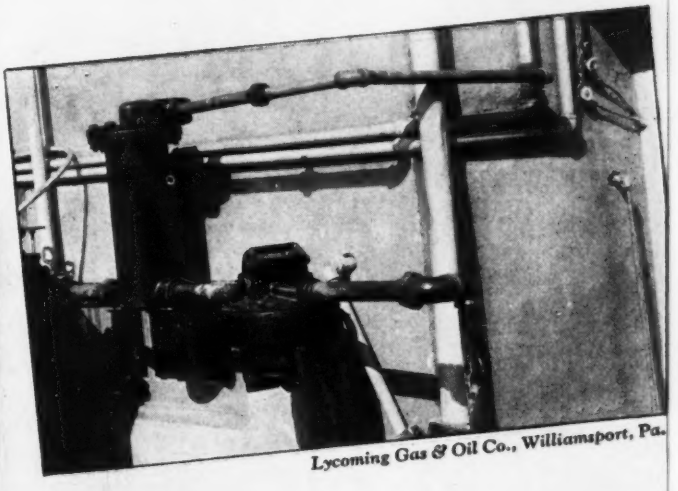
Sherwood Bros., Philadelphia, Pa.

Here are six—

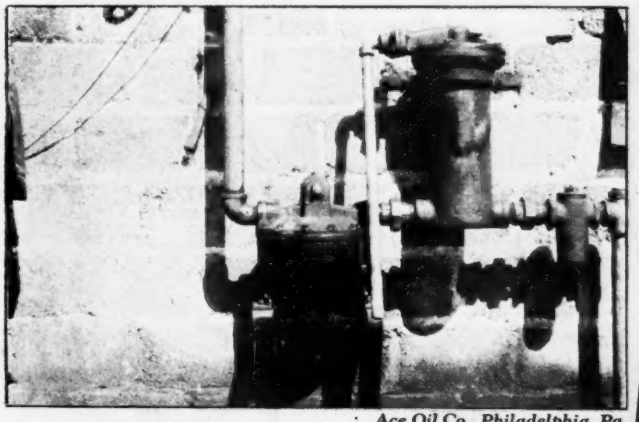
of the several thousand successful "Xacto" Meter installations that give accurate records on liquid movements and effectively prevent avoidable losses in these bulk stations.

BOWSER

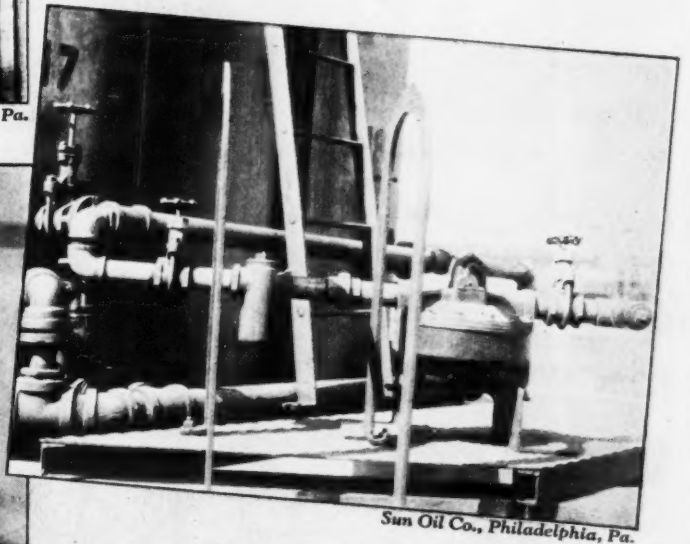
FORT WAYNE, INDIANA



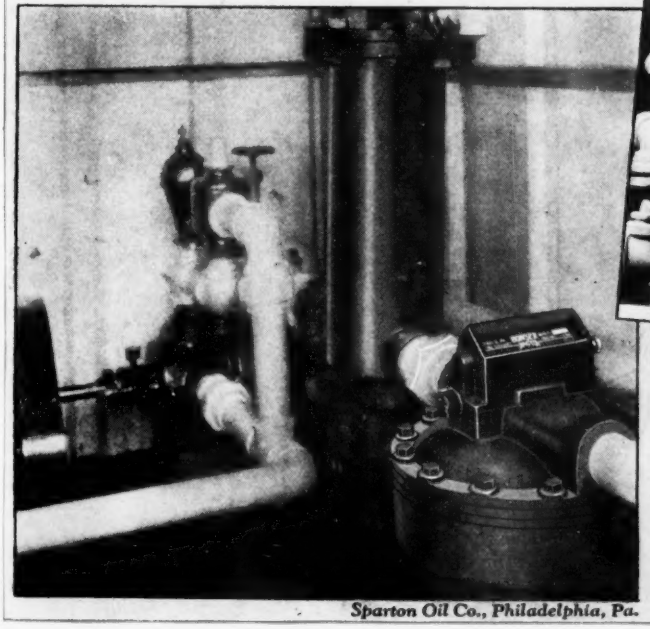
Lycoming Gas & Oil Co., Williamsport, Pa.



Ace Oil Co., Philadelphia, Pa.



Sun Oil Co., Philadelphia, Pa.



Sparton Oil Co., Philadelphia, Pa.

S. F. BOWSER & CO., INC.
1302 Creighton Ave., Fort Wayne, Ind.

Please tell me all about "Xacto" and how it provides accurate records and prevents over-measure on deliveries.

Name.....

Address.....

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Sales	Week Ended Sept. 8 First	High	Low	Last	Change
37⅞	27⅝	38	27⅛	(sh) 922,075	N.P.	Amerada Corp	50cQ	July 31, 28	13,100	30⅜	32½	30¼	31½	+ 1¼
82½	35⅛	85	51¼	(sh) 209,180	N.P.	American Republics Corp	....	.....	12,100	65	68½	65	67¼	+ 1¼
50¼	35	53⅜	37½	$56,000,000	$ 25	Associated Oil	50cQ	June 30, 28	1,270	48½	*53⅜	48½	51⅞	+ 3⅞
131⅜	104	171¾	95¾	50,000,000	100	Atlantic Refining	$1Q	Sept. 15, 28	32,800	170	171½	166¼	169	— 1½
119	115½	118¼	115	20,000,000	100	do pfd	$1.75Q	Aug. 1, 28	.....	....	....	....	....	.....
35½	20¾	32¼	20⅛	28,725,675	25	Barnsdall Corp. A	....	Feb. 6, 28	221,700	29¼	*32¼	29⅛	31¾	+ 2¾
32½	20½	30¾	22	799,775	25	do B	....	Feb. 6, 28	800	30¾	*30¾	30¾	30¾	— 5½
18¼	14	20¼	12¼	945,888	N.P.	Beacon Oil	.....	.....	37,300	16⅜	17⅞	16	17½	+ 1⅛
32⅞	20	32¾	24	51,524,150	25	California Petroleum	25cQ	July 2, 28	4,000	31½	36	31½	35¼	+ 4
96¼	65	94⅞	70	20,785,400	100	General Asphalt	.....	.....	26,000	76⅞	80	76½	77	+ 1
144⅞	107¼	141½	111	6,792,200	100	do pfd	$1.25Q	Sept. 1, 28	500	116	120	116	120	+ ⅝
175¾	60⅛	167	127	25,000,000	100	Houston Oil	....	.....	18,100	142½	147¾	142¼	143	+ 1
32¾	17⅝	31⅞	21¾	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	July 31, 28	22,100	25¾	28⅜	25¾	27½	+ 1¾
12⅛	7⅝	39⅝	9	$3,280,340	$10	Indian Refining	....	Dec. 15, 20	22,300	34	34⅜	32½	32½	— 1
12	7¼	37¼	8½	4,550,110	10	do ctfs	....	.....	18,200	32	32⅛	30	30¼	— 1
112	99	250	101	2,296,400	100	do pfd	....	Dec. 15, 21	.....	....	....	....	....	.....
37¾	20½	39⅛	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport	75cQ	May 1, 28	2,000	31	32½	31	31¼	+ ¼
18⅜	10	19¾	9⅜	(sh) 1,237,078	N.P.	Louisiana Oil Refining	.....	.....	32,700	14	16½	13⅞	15	+ 1¼
97	85¼	101	78	$4,000,000	$100	do pfd	$1.50Q	Aug. 15, 28	.....	....	....	....	....	.....
22¾	12	25½	12½	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	3,100	16⅞	18¾	16½	17⅝	+ ⅜
58½	31	44½	33	(sh) 2,316,692	N.P.	Marland Oil Co	....	Mar. 31, 27	52,200	36¾	39½	36½	38⅞	+ 1¾
320	200	360	250	$45,942,800	$100	Mexican Petroleum	$3Q	July 20, 28	.....	....	....	....	....	.....
....	....	....	....	12,000,000	100	do pfd	$2Q	July 20, 28	.....	....	....	....	....	.....
9¼	3	39	4⅝	(sh) 945,939	N.P.	Mexican Seaboard	....	Nov. 15, 24	60,600	30	31¼	27½	30	0
39⅝	25½	33¼	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	46,700	29½	33	29½	32½	+ 3½
105	97	115⅛	103¼	$6,718,000	$100	do pfd	$1.75Q	Sept. 1, 28	.....	....	....	....	....	.....
3⅜	1⅝	7⅜	2⅜	24,298,850	10	Middle States	....	July 1, 23	12,400	4⅝	4⅞	4⅜	4⅝	+ ⅛
2¾	1⅛	5⅞	1½	5,501,370	10	do ctfs	....	.....	1,900	3¼	3½	3¼	3⅜	+ ¼
1⅞	1	2¼	1¼	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	6,700	1⅛	1¼	1⅛	1⅛	0
65⅞	40½	53¾	38¼	$48,807,400	$ 50	Pan American P. & T.	....	Oct. 20, 27	3,400	39½	42½	39	41	+ 1½
66⅜	40¼	54⅝	37⅜	121,097,900	50	do B	....	Oct. 20, 27	41,500	40⅜	42⅜	39⅛	41⅛	+ 1
37⅞	16¾	28⅜	15½	(sh) 400,000	N.P.	Pan American Western B	....	Jan. 30, 27	11,200	17	18½	17	17⅛	+ ⅛
18⅞	8	21¾	11½	(sh) 198,770	N.P.	Panhandle P. & R	....	.....	3,800	14½	16	14½	14½	+ ⅜
83	54	106¼	70	$2,935,200	$100	do pfd	....	July 2, 23	200	83	85	83	85	0
60¼	36¼	44⅝	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	37½cQ	July 2, 28	19,800	39½	41	39½	40¾	+ 1¼
1⅛	½	4¼	½	$29,622,925	$ 25	Pierce Oil Corp	....	.....	16,800	2¼	2¾	2⅛	2¾	+ ⅝
24	13½	30½	16¼	15,000,000	100	do pfd	....	Feb. 1, 22	1,000	18½	22¾	18½	22	+ 3⅞
5½	2½	6⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	7,300	4	4¼	4	4⅛	+ ⅛
33⅞	16⅜	26⅞	16	$37,450,850	$50	Producers & Refiners	....	Sept. 15, 23	8,000	24	26⅜	24	25½	+ 1⅜
50	36⅞	46⅞	41	2,845,350	50	do pfd	....	May 1, 25	50	42½	42½	42½	42½	+ ¼
33½	25	27½	19	75,959,250	25	Pure Oil Co	12½cQ	Sept. 1, 28	30,800	23⅞	24¾	23⅝	24	+ ⅛
115½	111⅜	115	108	13,000,000	100	do 8% pfd	$2Q	July 2, 28	80	113	113⅞	113	113⅛	— ⅛
28⅝	25⅜	50¾	24	$29,224,894	$25	Richfield Oil	‡25cQ	Aug. 15, 28	121,000	49¾	51	48⅝	50	+ 1
54½	44¼	59¼	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.879	Aug. 3, 28	3,500	59⅛	59½	58¼	58¼	— ⅛
47⅞	41⅜	51¼	40⅝	(sh) 77,590	L2	Shell Transport & T	$1.455	July 23, 28	1,000	51¼	*51¼	51¼	51¼	+ 1¼
31¾	24⅝	31	23¼	(sh) 10,000,000	N.P.	Shell Union Oil	35cQ	June 30, 28	29,700	26⅝	27⅜	26⅝	27⅜	+ 1¼
26⅜	14¼	24⅜	18⅛	$7,208,080	$ 10	Simms Petroleum	....	Apr. 1, 27	7,400	20⅞	22⅛	20½	22⅛	+ 1⅝
22⅜	15	30¼	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated	....	May 31, 24	192,800	26	28⅜	26	27	+ 1⅝
104½	97	109½	102½	$16,604,600	$100	do pfd	$2Q	Aug. 15, 28	100	107½	107½	107½	107½	— ¼
37⅝	24⅛	34	25	27,396,590	25	Skelly Oil Co	50cQ	June 15, 28	32,100	30⅛	33⅛	30⅛	32¾	+ 2½
60¾	50⅜	63⅞	53	(sh) 13,016,434	N.P.	S. O. California	62½cQ	Sept. 15, 28	51,600	58⅝	60⅜	58⅝	59	+ ½
41⅜	35⅛	49	37¾	$607,910,525	$ 25	S. O. New Jersey	‡25cQ	Sept. 15, 28	98,100	44¾	46½	44¾	45⅛	+ ⅜
34⅛	29¾	41½	28¾	427,973,275	25	S. O. New York	40cQ	Sept. 15, 28	101,100	35⅛	37	35⅛	36⅛	+ ⅞
34⅞	30	54⅞	31½	(sh) 1,206,073	N.P.	Sun Oil	25cQ	Sept. 15, 28	20,300	54⅞	59½	54	57	+ 2½
101⅝	99	109½	100	$5,000,000	$100	do pfd	$1.50Q	Sept 1, 28	.....	....	....	....	....	.....
6½	3⅛	9½	2½	(sh) 1,121,368	N.P.	Superior Oil Corp	....	Dec. 20, 20	7,200	6⅝	7⅛	6½	6⅝	0
58	45	70⅞	50	$180,480,550	$ 25	The Texas Corp	75cQ	July 2, 28	55,100	63	*70⅞	63	68¼	+ 6
18⅞	12	17½	12½	8,380,340	10	Texas Pacific Coal & Oil	....	Jan. 3, 28	14,800	13⅞	14⅞	13¾	14¼	+ ⅜
29⅛	19	27⅝	19⅝	(sh) 2,168,410	N.P.	Tide Water Oil Co	20cQ	June 30, 28	7,100	27½	29¾	25¾	29¾	+ 3¼
90⅛	85	94½	87	$20,705,200	$100	do 5½% pfd	$1.25Q	Aug. 15, 28	400	89	90½	87½	90¼	+ 1¼
19⅛	15¾	22½	14¾	(sh) 4,796,158	N.P.	Tide Water Associated	....	Aug. 1, 27	60,600	20¾	25	20½	24⅜	+ 3⅞
90⅜	85	90¾	82⅛	$72,745,900	$100	do pfd	$1.50Q	July 2, 28	2,700	89	*90¾	89	90¾	+ 2¼
10⅜	3⅜	10⅞	7	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	29,300	7⅝	8	7½	7¾	+ ¼
56½	39⅝	57	42¾	$40,791,225	$ 25	Union Oil of California	50cQ	Aug. 10, 28	8,300	50⅛	52⅞	50	51	+ 1
127½	94	128⅛	115	30,844,000	100	Union Tank Car Co	$1.25Q	Sept. 1, 28	800	113¾	115	113¾	115	— 1¾
34½	24½	42¾	26	(sh) 355,440	N.P.	Warner Quinlan	50cQ	July 2, 28	49,300	40⅞	*42¾	40	41⅞	+ 1⅜
27½	20	26⅝	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	25cQ	July 20, 28	9,400	25	26½	25	26	+ 1¼

*New High †New Low ‡Also extras s-Stock Total Sales 1,696,200

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Sales	Week Ended Sept. 7 First	High	Low	Last	Change
....	....	4	2½	N.P.	Ark. Nat. Gas (new)	2,012	3	3	2⅝	2⅞	— ⅛
....	....	7½	6⅜	N.P.	do pfd	3,608	7¼	7¼	7⅛	7¼	0
98⅜	80⅞	120¼	90¾	100	Columbia Gas	100	124	*124	124	124	+ 3¾
107⅞	100	124	107	100	do pfd	.....	....	....	....	....	.....
15	7½	10	6⅜	10	Devonian Oil	270	7¼	7¼	7⅛	7¼	+ ¼
....	....	15	9	10	Dixie Gas & Util	60	9	9	†9	9	— 1
....	....	95	85	100	do pfd	.....	....	....	....	....	.....
117½	115	116	115	100	Duquesne Light pfd.	.....	....	....	....	....	.....
....	....	85	80½	100	Fayette County Gas	.....	....	....	....	....	.....
12¼	6	22	12	N.P.	Houston Gulf Gas	.....	....	....	....	....	.....
59¼	37¼	58	48⅝	$ 25	Lone Star Gas	1,789	54	54⅛	54	54	0
....	....	36½	36	25	Petroleum Exploration	.....	....	....	....	....	.....
....	....	.50	.50	....	Phoenix Oil pfd	500	.50	.50	.50	.50	0
3⅞	3	4	3	5	Pittsburgh Oil & Gas	377	3	3	†3	3	— ¼
8	5½	7¼	6	10	Salt Creek Cons	.....	....	....	....	....	.....
26½	17	22	16¾	10	Tidal Osage	100	21	21	21	21	+ 4
43	33	33⅜	30½	N.P.	Waverly Oil Wks. A	335	33	33	33	33	0
....	....	19	17½	$ 25	Wiser Oil	150	17½	17½	17½	17½	0

*New high record †New low.

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Sales	Week Ended Sept. 7 First	High	Low	Last	Change
95	88	132	120	25	Gulf Oil	.....	....	....	....	....	.....
....	....	115	115	....	Houston Gulf Gas pfd.	.....	....	....	....	....	.....
10¾	5½	9	5½	25	Leonard Oil & Dev	.....	....	....	....	....	.....
2¾	1¾	....	....	5	Pittsburgh Oil Dev	.....	....	....	....	....	.....
31	19	22	16¾	5	Plymouth Oil	200	19	19	19	19	— ¾
6	5	4⅝	4	5	States Oil	.....	....	....	....	....	.....
3½	1½	4½	2¼	1	Texon Oil & Land	.....	....	....	....	....	.....
25¾	18	18	15	10	Tidal Osage Non-vgt.	.....	....	....	....	....	.....

*New High †New Low x Ex Dividend

Oil Dividends

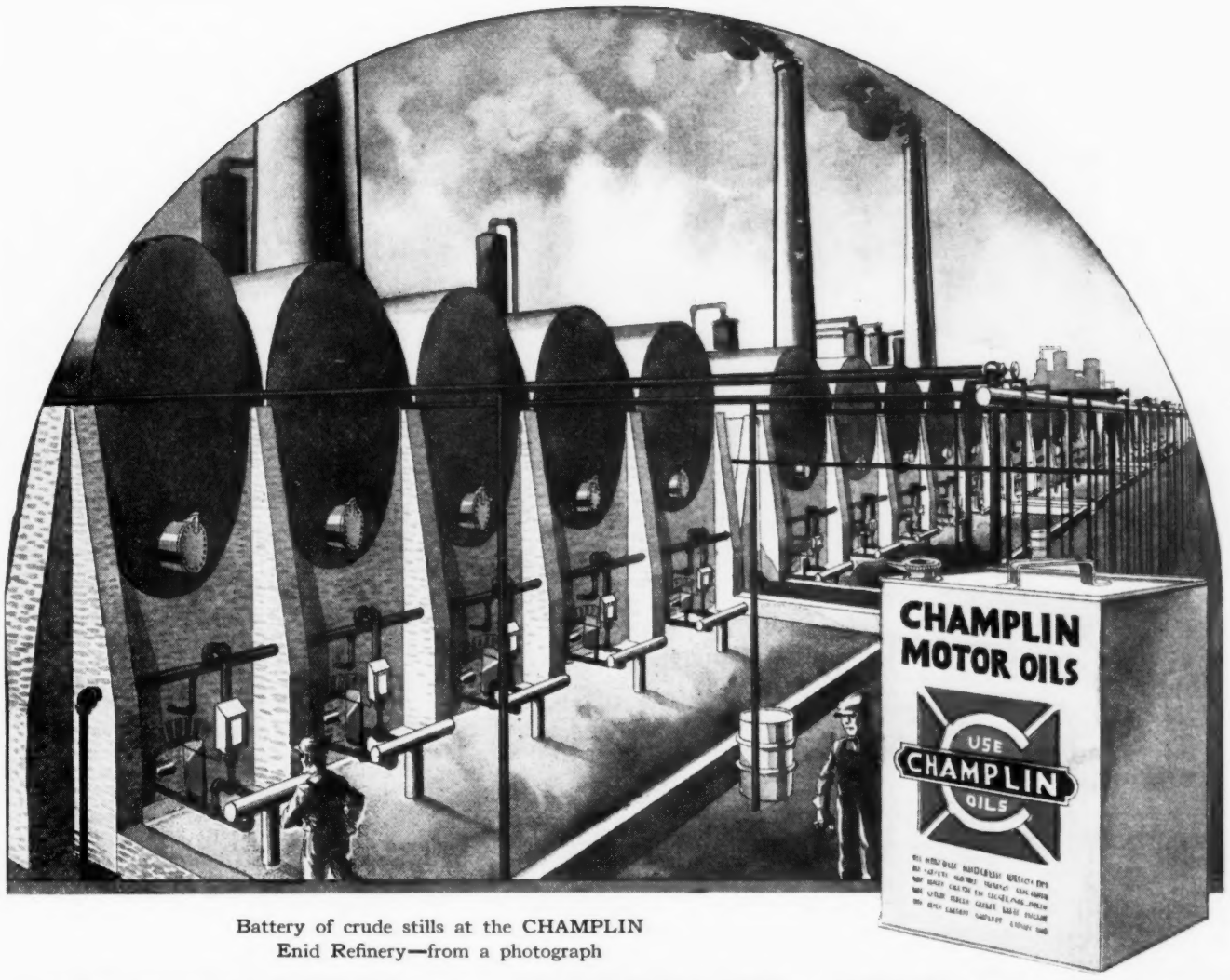
	Amount	Stock of Record Payable	Record
Associated Oil q	50c	Sept. 29	Sept. 17
Borne Scrymser s.a	$1	Oct. 15	Sept. 21
do extra	50c	Oct. 15	Sept. 21
Gulf Oil q	37½c	Oct. 1	Sept. 20
Honolulu Cons. Oil q	50c	Sept. 15	Sept. 5
do extra	25c	Sept. 15	Sept. 5
Humble Oil q	30c	Oct. 1	Sept. 11
do extra	20c	Oct. 1	Sept. 11
Mountain Prod. q	65c	Oct. 1	Sept. 15
Pure Oil 8% pfd. q	$2	Oct. 1	Sept. 10
do 6% pfd. q	$1.50	Oct. 1	Sept. 10
do 5¼% pfd. q	$1.25	Oct. 1	Sept. 10
Salt Creek Cons. q	20c	Oct. 1	Sept. 15
S. O. Kentucky q	$1	Sept. 29	Sept. 15
Tide Water-Assoc. pfd. q	$1.50	Oct. 1	Sept. 17
Tide Water Oil q	20c	Sept. 29	Sept. 17
West Coast Oil pfd. q	$1.50	Oct. 5	Sept. 25
West Coast Oil extra	$3	Oct. 5	Sept. 25
Warner Quinlan q	50c	Oct. 1	Sept. 12
do 6½% pfd. q	$1.62½	Oct. 1	Sept. 12

Oil Company Earnings

Half Year	1928	1927
Mexican Seaboard	*$527,377	*$1,277,935
American Nat. Gas	†781,576	.....

Second Quarter	1928	1927
Mexican Seaboard	*$100,123	*$760,027

*Loss. †Before federal taxes and amortization but after preferred dividends.



Battery of crude stills at the CHAMPLIN Enid Refinery—from a photograph

CHAMPLIN MOTOR OILS ARE THOROLY REFINED

11 years ago Mr. H. H. Champlin established at the then new and small CHAMPLIN Refinery the ideal of "doing things *RIGHT*",—the rule of *thoroughness*. From the first, CHAMPLIN Oils have been produced from only the *best* crude obtainable, and the refining processes have had as their goal not any commercial standard but the standard of *perfection*. CHAMPLIN Oils have always been made—not as good as necessary—but as fine as *possible*.

CHAMPLIN Motor and Tractor Oils possess exceptional *stamina*. They will definitely stand up and retain their body under the high operating temperatures of modern motors. They possess exceptional *purity*. Carbon and wax contents are reduced to negligible minimums, and they contain no acids or other impurities that cause corrosion. CHAMPLIN products have a record of holding customers. A trial will convince you, also. Prompt service is assured. Phone, wire or write for quotations.

"CHAMPLIN Oils Have Always Been Good—ALL WAYS"

USE CHAMPLIN OILS

CHAMPLIN REFINING COMPANY, Enid, Oklahoma

CHAMPLIN OILS

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Sept. 8 Sales	First	High	Low	Last	Change
21⅝	17⅜	22¾	17	£ 4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	1,100	18	18	17¾	17⅞	0
21½	17⅝	20½	16¾	.....	£ 1	do cts. non-voting	.....	.....	900	17¼	17½	17½	17⅞	+ ¼
3¾	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	100	2⅛	2⅛	2⅛	2⅛	— ⅛
6½	2½	9¾	3¾	$ 10,000,000	$ 50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
69	50	56	49	1,000,000	25	Borne Scrymser	‡$1S.A.	Apr. 16, 28	.....	.....	.....	.....	.....	.....
60	45	76	58	10,000,000	50	Buckeye Pipe Line	‡$1Q	Sept. 15, 28	300	50	63	62	63	+ 2
126	76½	161	117¼	3,000,000	25	Chesebrough Mfg	$1Q	June 30, 28	.....	.....	.....	.....	.....	.....
22⅝	16¼	23	16	36,123,350	10	Continental Oil	.....	Dec. 15, 27	18,800	17	17⅝	16⅞	17	0
137	89	114	88	3,000,000	100	Cumberland Pipe Line	$15	Sept. 15, 28	50	98	98	98	98	— 1
68½	47	88	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	Aug. 1, 28	.....	.....	.....	.....	.....	.....
13½	3½	13	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	8	8	8	8	— ¼
59¾	23	87¾	27	4,000,000	100	do new pfd	.....	June 30, 26	910	83	84¼	83	84	+ 1¼
60⅛	35½	89¾	35	2,000,000	100	do old pfd	.....	June 30, 26	180	83	85½	83	85½	+ 2¾
68½	54	84⅞	60	73,685,700	25	Humble Oil & Refining	‡30cQ	July 1, 28	19,000	79⅜	83⅜	78½	83⅜	0
182	123¾	245	176½	20 000,000	100	Illinois Pipe Line	$6S.A.	June 15, 28	400	239½	239¾	232½	232½	— 2½
64¾	37¾	73½	56¾	(sh) 6,591,458	N.P.	Imperial of Canada	‡25cQ	Sept. 1, 28	7,000	69¼	*73½	69¼	72¾	+ 3¾
94½	61	89½	74⅞	$ 5,000,000	$ 50	Indiana Pipe Line	‡$1Q	Aug. 15, 28	.....	.....	.....	.....	.....	.....
39	28¼	45¼	35	(sh) 7,123,544	N.P.	International Petroleum	25c	June 30, 28	8,000	37⅞	39¾	37½	38	+ ¾
24	13¼	32⅜	19⅜	6,363,350	12.50	National Transit Co	‡25cQ	Sept. 15, 28	300	21½	22	21½	22	+ ⅝
44½	31¼	59⅛	37½	5,000,000	100	New York Transit	.....	July 15, 26	50	53½	53½	53½	53½	0
100	70	125	94	4,000,000	100	Northern Pipe Line	(a)$3S.A.	July 2, 28	.....	.....	.....	.....	.....	.....
67⅞	52	68¼	58	60,000,000	25	Ohio Oil Co	50cQ	Sept. 15, 28	200	62	62½	62	62½	+ ½
39	12	84	28	10,000,000	25	Penn Mex. Fuel	$1.25	May 31, 28	400	35	35	33	35	0
55½	45⅜	56	46⅛	60,479,600	25	Prairie Oil & Gas	.....	Aug. 31, 27	7,400	46¾	47¼	46⅜	46½	+ ¼
190	132	223	172	81,000,000	100	Prairie Pipe Line	$3.50Q	July 31, 28	1,100	194	194¾	191	191	— 3
201⅜	175½	186	167	4,000,000	100	Solar Refining	$5S.A.	June 20, 28	.....	.....	.....	.....	.....	.....
27¼	15½	35⅞	12	1,000,000	10	Southern Pipe Line	$2	Dec. 1, 27	.....	.....	.....	.....	.....	.....
41½	35	53	36¾	20,000,000	25	South Penn Oil	50cQ	June 30, 28	3,600	49	50¼	48⅝	49½	+ ⅜
83	55½	100¾	70	3,500,000	100	South West Pa. Pipe Lines	‡$1Q	July 2, 28	50	82¾	82¾	82¾	82¾	— 1¾
81½	64⅝	83⅝	70⅞	230,788,513	25	S. O. Indiana	‡62½cQ	Sept. 15, 28	25,900	75¼	78⅛	75¼	77	+ 1¾
20¾	14⅝	27¾	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	10,700	21¾	22⅛	21⅜	22⅛	+ ⅜
130	111½	136⅛	122¼	17,103,011	25	S. O. Kentucky	$1Q	June 30, 28	2,000	130	130	127½	127½	—2 ½
49½	40	45⅞	39⅞	4,601,100	25	S. O. Nebraska	62cQ	June 20, 28	100	43½	43½	43½	43½	— ½
87½	72	84¾	71	14,000,000	25	S. O. Ohio	62½cQ	Apr. 2, 28	1,050	83¼	84	83¼	83½	+ ¼
122	117¼	125	117	7,000,000	100	do pfd	$1.75Q	Sept. 1, 28	90	119	119	119	119	0
21	14½	26	16	30,844,000	25	Swan Finch Co	30cQ	June 30, 28	.....	.....	.....	.....	.....	.....
....	....	87⅛	72	124,941,600	25	Vacuum Oil	75cQ	June 20, 28	4,500	80¼	82½	80⅜	81⅛	+ 1⅛

*New high †New low xEx dividend ‡Also extras. (a)$50 Special Sept. 1, 1928.

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Sept. 8 Sales	First	High	Low	Last	Change
2⅛	.55	1½	.65	$ 5	Amer. Con. Oilfields	8,100	.69	.79	.66	.68	— .06
7½	2¾	6⅝	3⅛	N.P.	Amer. Maracaibo	2,800	4¼	4½	4⅛	4½	0
2¾	1	4	2¼	$ 10	Argo Oil	500	2¾	2⅞	2¾	2⅞	+ ⅛
9¾	6¾	10¼	7⅝	10	Arkansas Nat. Gas	.....	.....	.....	.....	.....	.....
40	20½	40½	32¾	N.P.	British American	.....	.....	.....	.....	.....	.....
28¼	15½	23⅞	12¾	25c	Carib Syndicate N	4,800	13⅝	13⅝	†12¾	13	— ⅝
.....	.....	.....	.....	.....	do ctfs. of dep	.....	.....	.....	.....	.....	.....
58¾	40¼	71¾	54	$ 20	Cities Service	181,000	66⅜	67⅜	66¼	67⅜	+ ⅞
95⅛	87	103½	94½	100	do pfd	1,000	99⅞	99⅞	99½	99⅝	— ⅜
8½	7¼	9⅝	8⅛	10	do pfd. B	100	9⅜	9⅜	9⅜	9⅜	0
29¼	22½	94	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅞	1⅛	2¼	1⅛	1	Colombia Syndicate	2,300	1¼	1¼	1⅛	1¼	— 1/16
9⅜	6⅝	8¼	6⅜	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
14⅞	9½	17½	10	N.P.	Creole Syndicate	12,500	12½	13⅛	12¼	12½	— ⅛
3	.50	3¼	.76	N.P.	Crown Central	1,400	2	2	1⅞	1⅞	— ¼
12	4	30⅛	8¼	N.P.	Darby Petroleum	6,800	20½	22⅝	20½	22⅜	+ 1⅞
11⅛	4	13¼	7⅞	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	22	1	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
16¾	4	15½	7½	N.P.	do pfd	500	15½	15½	15½	15½	+ ½
3¾	1	2	1	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
2	.40	.53	.15	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	148½	101⅛	$ 25	Gulf Oil Corp	8,000	122½	128	120¼	125⅞	— ⅛
2½	.80	7⅞	1	10	Intercontinent Pet	3,600	1⅜	1½	1¼	1⅜	0
2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	200	1½	1½	1½	1½	0
10⅞	5⅛	9⅝	5⅛	N.P.	Leonard Oil & Dev	500	6⅜	6½	6⅛	6½	+ ⅜
27½	20	32⅜	20	N.P.	Lion Oil & Refg	500	25½	27½	25½	27½	+ 2½
59⅛	37	57	48⅝	$ 25	Lone Star Gas	800	53⅞	54	53½	54	+ ⅛
2⅞	.80	1⅞	.78	1	Magdalena Synd	7,200	81	89	80	83	—14
21⅜	20⅞	22⅛	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	36½	N.P.	Margay Oil	.....	.....	.....	.....	.....	.....
3	1⅛	40⅛	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	4	N.P.	Mexico-Ohio Oil	200	4½	4½	4½	4½	0
1½	1	1½	.76	$ 1	Mountain & Gulf	100	84	84	82	82	+ 1
29¼	22¾	28⅝	22⅛	10	Mountain Producers	3,900	23	23	22⅛	22⅛	0
5⅞	4⅝	5⅝	4¾	5	New Bradford	200	5	5	5	5	0
6¼	4	5½	3⅝	10	New England Fuel	.....	.....	.....	.....	.....	.....
16	9¼	11⅜	7½	1	New Mex. & Ariz	4,800	10½	10⅜	10	10	— ½
13⅞	9	15½	11¼	25	New York Oil	.....	.....	.....	.....	.....	.....
12¾	9½	13¼	10¾	N.P.	North Cent. Texas	1,400	12½	12¾	12¼	12½	0
23⅛	21¼	....	....	....	Okla. Nat. Gas ctfs	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2¼	N.P.	Pandem	3,800	3	3	2⅜	3	0
12¼	7	15⅝	8½	N.P.	Panapec Oil	37,500	12½	14	12⅛	13	+ ¼
9	7⅛	17	10⅝	$ 25	Paragon Refg	200	15¾	*17	15¾	17	+ ½
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅛	7¾	5¼	10	Pennok Oil	200	6	6	6	6	— ¼
.....	.....	4½	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅜	7	14½	8	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
15½	3½	13	4⅛	N.P.	Reiter-Foster	8,400	9⅝	10½	9½	10¼	+ ½
28¾	15	31½	18	$ 25	Richfield Oil pfd	400	24½	24½	23¾	24	+ ¼
7	4½	9⅛	4⅝	N.P.	Ryan Consolidated	1,800	5⅝	6⅛	5½	5⅞	+ ⅜
8	5¼	7¼	5¾	$ 10	Salt Creek Cons	400	6⅛	6⅛	6⅛	6⅛	— ⅜
35⅛	27¼	35	25⅝	10	Salt Creek Prod	4,500	26¾	26⅞	†25⅝	25⅝	— 1⅛
7	1¼	3½	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
26¼	17	22⅛	13	10	Tidal Osage	5,700	17½	20½	17½	19	+ 1¾
23¾	15	21¼	13⅛	10	do non-voting	7,800	17½	19¾	17¼	19	+ 2
92	63½	87	75	100	Transcontinental pfd	.....	.....	.....	.....	.....	.....
23¼	7	53½	18	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
7⅜	4¼	6⅝	4⅞	5	Venezuelan Petrol	9,300	4⅞	5	4⅞	4⅞	— ⅛
32¾	19½	25	17½	N.P.	Wilcox Oil & Gas	500	17½	17⅞	17½	17⅞	— ⅛
8	4¾	8¼	5⅜	$ 1	Woodley Petroleum	600	5⅜	5½	†5⅜	5½	0
6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	300	5	5¼	5	5	— ¼

*New High †New Low xEx Dividend

New York Bonds

Week Ending Sept. 7

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	102⅞	102¾	102⅞	+ ⅛
Atlantic Refg. deb. 5s	101¼	100⅛	101⅛	+1
Barnsdall Corp. 6s	107½	106¼	106¾	— ⅛
Barnsdall Corp. 6s ex-war.	92½	90½	90¼	—1½
Cal. Pet. 5s	101¼	98¾	100	+2
Cal. Pet. 5½s	102¼	101	101¼	+ ¼
General Petroleum 5s	100¾	100¼	100⅝	+ ⅝
Humble Oil & Refg. 5½s	101½	101¼	101½	+ ¼
Humble Oil & Refg. 5s	99¾	99⅜	99¾	+ ¼
Mid. Cont. Pet. 6½s	105⅛	105	105⅛	+ ⅛
Pan Amer. P & T 7s	104¾	104¼	104¾	0
Pan Amer. P & T 6s	102¾	102½	102½	— ¼
Pan Amer. P & T 6s	94¾	93¼	93¼	—1½
Prod. & Refg. 8s	110¾	110¾	110¾	0
Pure Oil 5½s	99¼	98⅝	99¼	+ ⅜
Shell Union Oil 5s	97½	97	97½	+ ⅛
Simms Pet. 6s	102	101	102	+1¼
Sinclair Con Oil 7s	102⅛	101¼	101¼	— ½
Sinclair Con Oil 6½s	99⅞	99	99⅞	— ⅛
Sinclair Con Oil 6s D	98⅝	98½	98½	— ¼
Sinclair Con Oil Crude 5½s	98¼	97¾	97¾	— ¼
Sinclair Pipeline	94	93	94	.....
Skelly Oil 5½s	92½	93	92¼	— ¼
S. O. N. Y. 4½s	95⅜	95	95¼	+ ¼
S. O. N. J. deb. 5s	102⅞	102½	102½	— ⅜
Superior Oil 7s	100	100	100	0
Union Oil of Calif 5s C	97¾	97½	97⅝	+ ⅛
White Eagle Oil 5½s	97¼	97	97¼	+ ¼

New York Curb Bonds

Week Ending Sept. 7

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	105	102	105	+4
Cities Serv. 5s '66	94⅜	94⅛	94¾	+ ⅛
Cities Serv. 6s '66	103¾	103⅜	103⅜	— ⅛
Cities Serv. G 5½s '42	95	93½	93½	0
Cont. Oil 5¼s '37	96	95	95¼	+ ½
Empire O & R 5½s '42	92⅞	92½	92⅜	+ ⅛
Galena Oil 7s '30	100½	100½	100½	0
Gulf Oil 5s '37	100	39¾	99⅞	— ⅛
Gulf Oil 5s '47	100	39¾	99⅞	— ⅜
Independent Oil 6s '39	101 1/2	100⅞	101¼	+ ⅜
Richfield Oil 6s '41	146½	140	144¼	+2¼
Richfield Oil 5½s '31	101½	100¼	101½	+1½
Sun Oil 5½s '39	101	100½	100½	0
Trans. Cont. Oil 7s '30	108	105¾	107	+1¼
Warner Quinlan 6s '42	118	110	116	+1¾

Cleveland Stock Market

Sept. 7	Par Value	Bid	Asked	Last Sale
Canfield Oil	100	112	135	115
do pfd	100	102	...	101
Fred G. Clark	10	5½	7½	7½
National Refining	25	35	37½	35½
do pfd	100	131	134	132
Paragon Refining Co	25	16⅛	16¾	16⅝
do pfd	100	125	128	126
do ct'fs of dep	...	16⅛	16½	16½

Planes Lead in Net Earnings Increase

CLEVELAND, Sept. 8.—In a comparison of earnings of 340 corporations in the first half of 1928 and the first half of 1927, the Federal Reserve Bank of Cleveland shows that a group of 28 oil companies earned 9 per cent less this year than last. The largest gain by any group was by two airplane manufacturers. Amusements ranked second. The bank in its Bulletin said:

"Net earnings of 340 industrial corporations in this country showed a substantial gain of 8.8 per cent in the first half of 1928 as compared with the corresponding period of 1927. The actual figures were $1,080,339,000 in 1928 and $995,124,000 in 1927. After subtracting the earnings of General Motors and United States Steel, the remaining 338 concerns earned $871,871,000 in the first six months of 1928, a gain of 7.5 per cent over last year.

"Considerable spottiness appears in individual lines, although the majority shared in the increase. An exceptionally strong showing was made by the two airplane manufacturers, and large increases were also reported by the motor, motor accessory, mining, shoe and leather, and amusement groups. Steels made a poor record with a loss of 8.3 per cent, and oils lost 9 per cent.

"It is of interest to note that the increase of 8.8 per cent in half-year earnings occurred in spite of the fact that industrial production, as measured by the Federal Reserve Board, was about the same in the first half of both 1928 and 1927. This would seem to suggest further reduction in operating costs and economy in operating methods.

"The following table gives first-half earnings in detail:

CORPORATION EARNINGS
First Half Year (1928-1927)
(In thousands of dollars)

		1928	1927	Per cent change
2	Airplane	$ 1,685	$ 630	+167.5
7	Amusement	13,423	7,312	+ 83.6
11	Building	11,502	13,142	— 12.5
8	Chemicals	25,732	23,321	+ 10.3
7	Cigar, Tobacco	5,715	5,739	— 0.4
18	Clothing, Textile	5,743	8,007	— 28.3
6	Coal	2,263	2,876	— 21.3
9	Equipment, Ry.	15,698	18,731	— 16.2
29	Food	75,886	71,153	+ 6.7
14	Machinery	10,795	10,542	+ 2.4
24	Mining	44,484	35,306	+ 26.0
23	Motor—Total	232,463	189,931	+ 22.4
	G. M.	161,267	129,220	+ 24.8
	Others	71,196	60,711	+ 17.3
26	Motor Accessory	21,975	16,331	+ 34.6
6	Office equipment	6,631	6,336	+ 4.7
28	Oil	52,839	58,075	— 9.0
4	Restaurant	3,328	2,950	+ 12.8
5	Rubber	3,143*	17,502	
6	Shoe, Leather	4,692	3,188	+ 47.2
19	Steel—Total	83,546	91,117	— 8.3
	U. S. S.	47,201	52,465	— 10.0
	Others	36,345	38,652	— 6.0
14	Stores	19,776	17,376	+ 13.8
74	All Other	132,080	114,511	+ 15.3
340	Grand Total	1,083,122	995,124	+ 8.8
338	Grand Total (Less G. M. and U. S. S.)	* 874,654	813,439	+ 7.5

*Deficit.

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AMERICAN LUBRICANTS

(For the Consumer)

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Specifications for Steam Cylinder and Valve Oils; for Marine Engine Oils and Oils for Marine Purposes; for Lubricating Oils for the State of Illinois; for Motor Oils; for Crank Case Oils and Diesel Engine Oil; for Turbine Oils and Air Compressor Oils; for Ice Machine Oils and Miscellaneous Gun Oils; for Transformer Oils and Electric Switch Oils; for Light Lubricating Oils and Light Oils for Various Uses; for Special Lubricating Oils for Railroads; for Engine and Bearing Oils; for Car Oils, Black Oils and Well Oils; for Gear, Chain and Wire Rope Lubricants and for Crusher Oils; for Petrolatums, Rust Preventive Compounds and Paraffin Wax; for Cup Greases; for Graphite Greases and Graphite; for Heavy Railroad Greases; for Transmission Oils and Greases.

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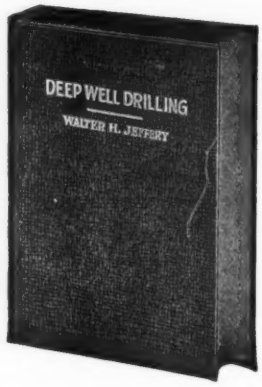

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